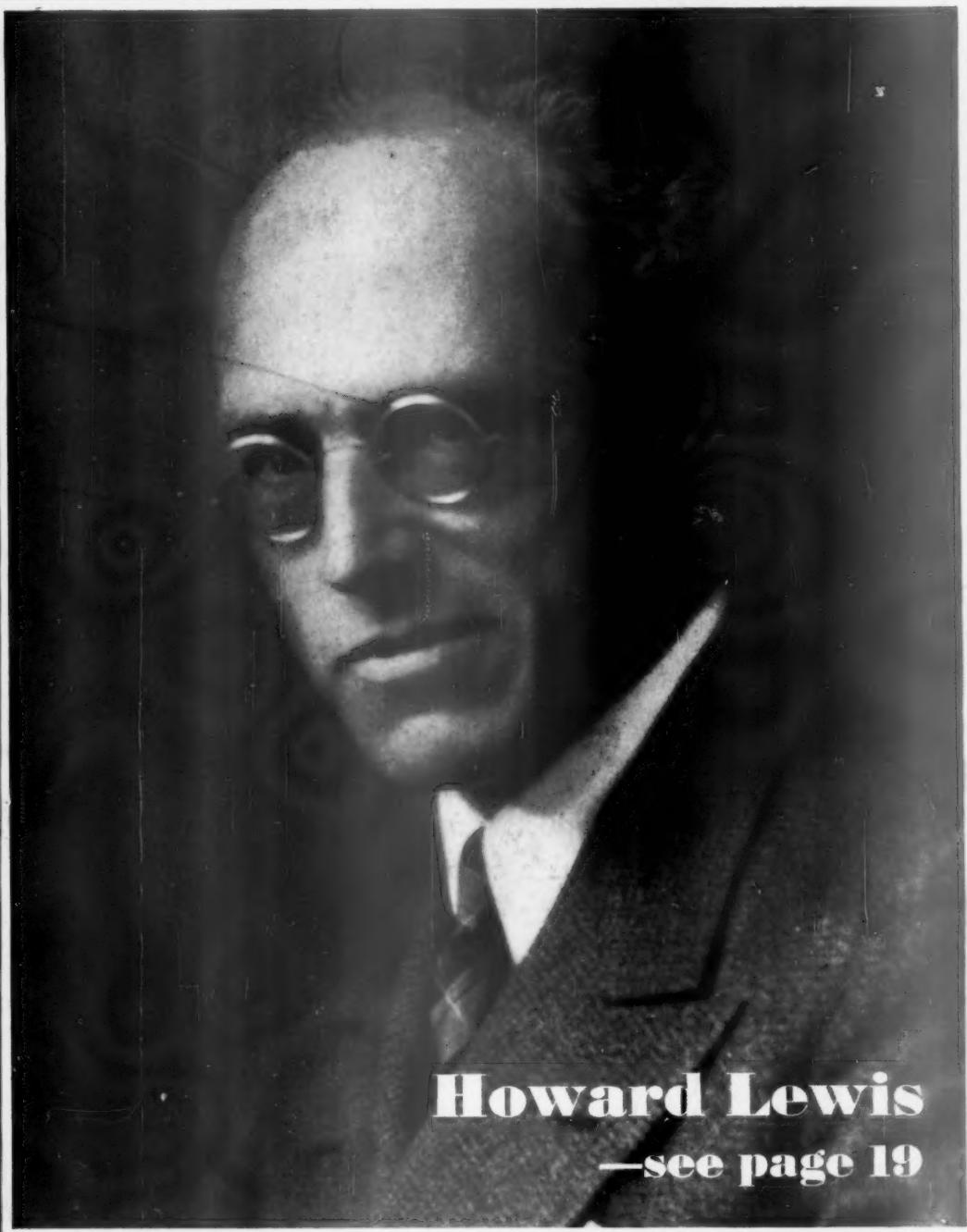


MARRIED

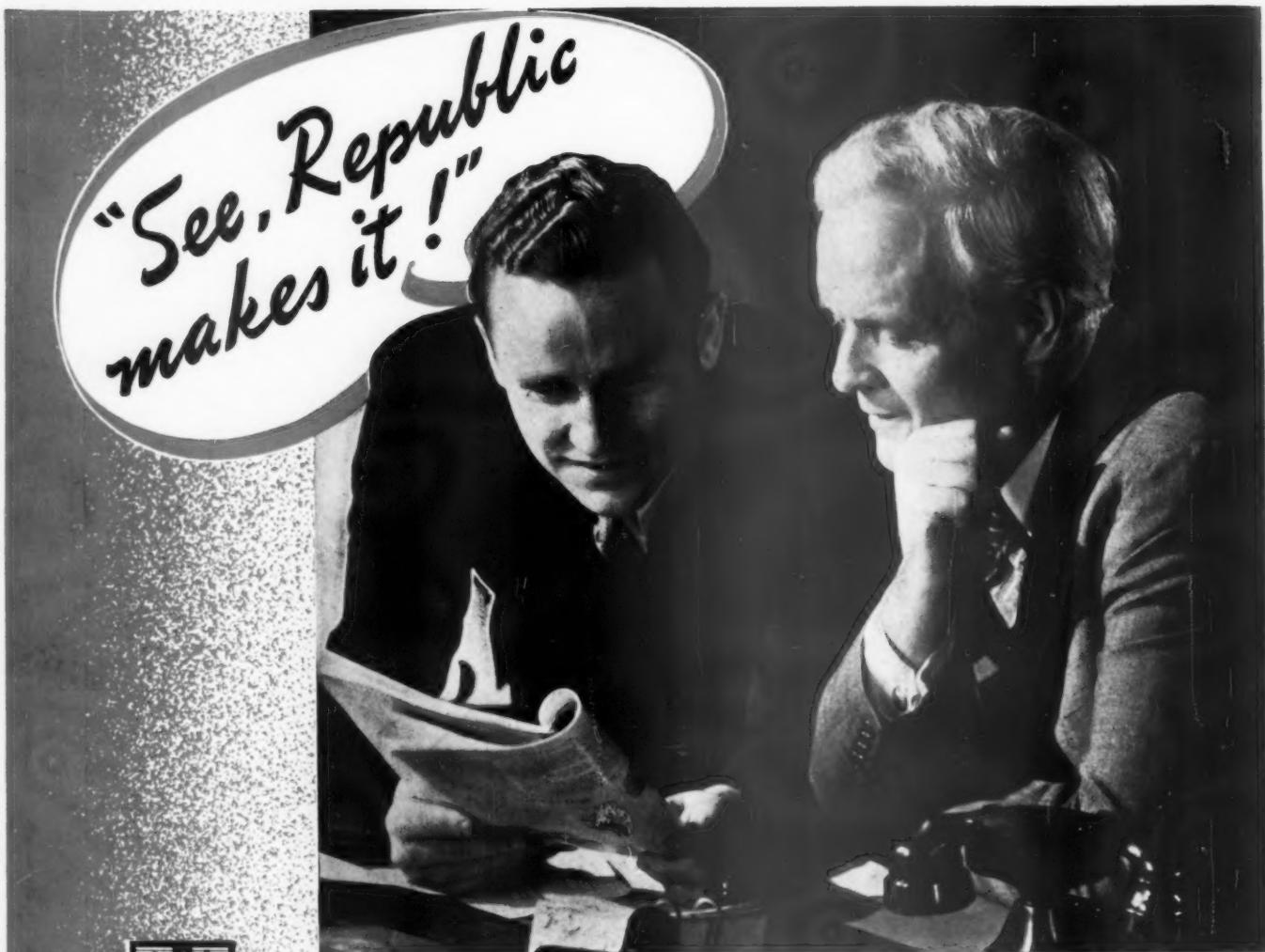
# PURCHASING

SINCE 1915 • THE NATIONAL MAGAZINE FOR PURCHASING AGENTS



MARCH 1938

Vol VI. No. 3



**REPUBLIC**  
STEEL  
REG. U. S. PAT. OFF.

**B**  
**BERLOY**

**D**  
**S**



**NILES**  
STEEL PRODUCTS

ELECTRUNITE  
TUBING

If "it" is a steel or any one of countless steel products, Republic makes it. And whatever "it" may be, you can be sure that it will be of the same uniform high quality as the Republic Steel products with which you are familiar.

Through the complete line of steels and steel products of its divisions and subsidiaries, Republic offers a centralized source of supply for practically all of your needs in steel. Offers you a means for simplifying your purchases. Brings the entire shipment to you at one time. Requires but one order, one shipment tracer, one invoice, one check.

For full details on the complete Republic line, write Republic Steel Corporation, Cleveland, Ohio.

**PRODUCTS OF UNION DRAWN STEEL DIVISION  
THAT YOU SHOULD KNOW ABOUT—**

A complete line of fine quality cold drawn bar steels in standard and special sections, in all carbon, alloy and stainless steel analyses, and in a wide range of sizes. Cold finished shafting for all purposes.

*When writing Republic Steel Corp. (or Steel and Tubes, Inc.) for further information, please address Department EP*



## YOU COULD COOK YOUR BREAKFAST ON THIS GOODRICH BELT

*A typical example of Goodrich improvement in rubber*

YOU could fry eggs, boil coffee and brown toast on this Goodrich conveyor belt. Such belts often operate at 250° F., hauling hot cinders from boilers, flaming coke from coke ovens, cement from kilns.

How to transport these and other hot materials was for years one of industry's worst headaches. A moving conveyor belt was everyone's dream, but the heat cooked the rubber, hardened it, ruined the belt in a few days.

Goodrich engineers tackled the problem and finally created a new kind of rubber, able to stand high temperature.

Today Goodrich Hot Material Belts are doing what everyone said was impossible — handling smoking hot materials yet keeping their strength for a long time.

In the Goodrich research laboratories, nothing seems impossible any more. Here rubber has become virtually a new material with properties never dreamed of before. Goodrich can attach rubber to steel with an inseparable bond, can make rubber that flexes indefinitely, resists abrasion 10 times better than steel, resists hot acid, oxidation, time itself.

The results of this Goodrich research

are yours in two ways—to help you improve your products by use of rubber, and to give you greater value when you buy standard rubber items such as belting and hose. Write us for the name of your nearby Goodrich Distributor. He brings you the practical results of Goodrich research—greater value in every rubber product you buy. The B. F. Goodrich Company, Mechanical Rubber Goods Division, Akron, Ohio.

**Goodrich**  
ALL *products problem* IN RUBBER

(Another story of Goodrich development work appears on inside back cover page)

# PURCHASING

*Established 1916 as "The Purchasing Agent"  
Consolidated with "The Executive Purchaser"*

**PURCHASING** is an independent journal, not the official organ of any association. It is the only publication of national scope devoted exclusively to the interests and problems of the purchasing executive in industry and government.

## Next Month: A SALES MANAGER DISCUSSES What Happens to the Order

*Published monthly by*  
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Acceptance under the Act of June 5, 1934, at Easton, Pa., Authorized June 4, 1936

**VOLUME VI  
NUMBER 3**

**PAGE 2**

**March 1938**

**15c A COPY, \$1.00 A YEAR  
CANADA AND FOREIGN, \$1.50 A YEAR**

**PURCHASING**

# Long Distance rates STEP DOWN EVERY EVENING AND ALL DAY SUNDAY



In the evening, after the day's duties are done . . . on Sunday, when the week's worries are over . . . these are especially pleasant times to bring far friends near and link scattered families by telephone.

Long Distance rates step way down after seven in the evening and all day Sunday. It takes little time and little money to talk to some one it would take hours and dollars to visit. Go there and back by telephone. Call after seven or on Sunday—and save.



## HERE'S HOW LITTLE IT COSTS TO TELEPHONE!

### BETWEEN THESE POINTS

### AT NIGHT AND ON SUNDAY\*

BALTIMORE, MD.	PHILADELPHIA, PA.	\$ .35
CHICAGO, ILL.	INDIANAPOLIS, IND.	.45
LANSING, MICH.	WHEELING, W. VA.	.60
BIRMINGHAM, ALA.	NEW ORLEANS, LA.	.70
ATLANTA, GA.	KANSAS CITY, MO.	1.20
SEATTLE, WASH.	DENVER, COLO.	1.80
LOS ANGELES, CAL.	DES MOINES, IOWA	2.50
SALT LAKE CITY, UTAH	WASHINGTON, D. C.	3.25
BOSTON, MASS.	SPOKANE, WASH.	4.00

\* 3-minute station-to-station rates . . . in effect from 7 P.M. to 4:30 A.M. every night and all day on Sunday.

# Yours on Request

Purchasing agents will find it well worth their while to read the publications reviewed on this and the following pages. From among the many submitted to us, they have been selected by the editors as having greatest interest and utility value to purchasing agents.

To obtain copies, simply fill in and mail coupon at the bottom of this page.

**276.** The Ryerson Certified Steel Book—a beautifully illustrated 28-page, 11" x 15", spiral plastic bound publication published by Joseph T. Ryerson & Son, Inc.—explains in detail how certified steels solve the problem of obtaining uniform and quality controlled steel for immediate shipment from stock. Of definite value to all users of steel, especially those interested in alloys, this fine book is a definite asset to every purchasing department. It includes specifications for an extensive variety of steels and alloys, in sheets, bars, strip, plates, structural shapes, etc.

**287.** One of the interesting features of a new booklet prepared by National Blank Book Co. is the comparison between regular white paper and green-white "Eye-Ease" paper. This booklet describes the many advantages of the new "Eye-Ease" records, which reduce eye-strain and fatigue and promote accuracy.

**300.** Of pertinent interest to purchasing agents is "How to Profit With Air Express," an 8-page pamphlet issued by Railway Express Agency. Specific applications for air and air-rail express are pointed out. A map is included showing air express routes all over the United States. A table of charges give rates to and from leading cities. Another table shows approximate elapsed flying time between these cities.

**301.** The new "Phillips" recessed head, self-centering screws and bolts are illustrated and described in an attractive colorful pamphlet prepared by the American Screw Co. Scientifically designed, with a tapered recess in place of the slot in the conventional screw, "Phillips" screws provide faster driving, better holding power, better appearance, reduced spoilage, fewer accidents, etc. Available in wood screws, machine screws, stove bolts, sheet metal screws.

**304.** "The Art and Science of Grinding," an interesting 48-page booklet issued by Sterling Grinding Wheel Co., features forty questions answered by an expert, in a section titled "What Do You Know About Grinding Wheels?" Other important information includes descriptions of various types of grinding wheels and their applications; recommendations on testing, operating speeds, etc.; metric conversion, wheel circumferences, weights of wheels and numerous other tables.

**305.** Building business and good will is the theme of the new Howard Paper Co.'s portfolio which contains samples of Howard Bond in white and fourteen brilliant colors. Also included are attractive specimens of letterheads and envelopes in plain, laid, ripple, linen and handmade finishes.

**314.** Fifteen new stock forms for inventory and stock control records are announced in a pamphlet issued by C. E. Sheppard Co. The result of an intensive study of thousands of inventory, purchase and stock records used by large companies, these forms are adaptable to combination purchase-quotation-and-inventory records, raw material control, stock and process control, contract and consignment records.

**315.** An exceptionally enlightening pamphlet entitled "What Do You Know About Envelopes?", issued by the Outlook Envelope Co., will prove of immeasurable assistance to purchasing agents in determining true value when buying envelopes. All of the elements which enter into the price—namely paper, printing, adhesives, packing—are analyzed in the pamphlet for the guidance of envelope buyers.

**317.** To meet new international airmail regulations necessitating new five-gram graduated beam precision scales, the Triner Sales Co. has designed two new scales which are illustrated and described in a catalog supplement sheet just issued. Purchasing agents interested in effecting savings for their export departments on foreign mail through accurate weighing of letters and packages should investigate these new models for use in both domestic and foreign branches.

**318.** The new sample book of thin papers just announced by Esleeck Mfg. Co. contains numerous samples for records, forms, copies, letterheads, advertising, legal documents, air mail, branch office and foreign correspondence. A variety of weights, finishes and colors, in grades ranging from 25% to 100% rag content, are included.

**323.** Representing a complete departure from previous grinding machine design, the new "20 Series" Plain Grinding Machines now being marketed by Brown & Sharpe Mfg. Co., are illustrated and described in an 8-page two-color catalog supplement. Complete specifications and detailed analyses of these machines, which are operated entirely by electrical control, are given.

**324.** "Before and after" photographs of shipping boxes used by various companies are presented in "IDEAS," a new portfolio issued by Hinde & Dauch Paper Co. As its name implies, this publication, in featuring the merchandising success stories which it illustrates, offers ideas for other users of shipping boxes.

**325.** "Efficiency By The Mile" is the appropriate title of an attractive 8-page, 8 $\frac{1}{2}$  x 11" folder devoted to the Underwood-Elliott-Fisher Co.'s new fanfold machines. Particularly interesting to purchasing agents in connection with purchase orders, records and requisitions, these machines incorporate new features of design and automatic operation, such as automatic electric carriage return, automatic line spacing, electric repeat line spacing, six-key decimal tabulator, palm tabulator, etc. Buyers have the option of floating sheet or roll carbon paper.

**326.** The "Speed-Mo" line of modern marking devices and office and factory specialties—used by purchasing agents for hundreds of large companies—is shown in the Rivet-O Mfg. Co.'s new Catalog No. 138. Among the items illustrated are a unique and comprehensive variety of stamp pads, fountain brushes, rotary daters, time stamps, line daters, line numberers, tray files, moisteners, punches, etc.

**327.** A colorful 6-page, 8 $\frac{1}{2}$  x 11" folder gives complete specifications for 29 Hills-McCanna non-ferrous alloys, which are divided into five groups—"copper-tin," "copper-aluminum-iron," "manganese-bronze," "copper-nickel," "silicon-copper-iron." Uses for each of the 29 alloys are designated.

(Additional listings on page 6)

**PURCHASING, 11 West 42nd St., New York, N. Y.**

I wish to receive the following literature:

**Numbers:** \_\_\_\_\_

**Name** \_\_\_\_\_

**Company** \_\_\_\_\_

**Address** \_\_\_\_\_

**City** \_\_\_\_\_ **State** \_\_\_\_\_

**PAGE 4**

**PURCHASING**



*"Wait 'til my Chief  
sees this kind  
of typing!"*

*— we'll all have new Underwoods then!"*

Typists everywhere express their amazement . . . Never has there been such supreme ease of Touch or such fine typemanship. And all agree that it's the world's best-looking typewriter, too.



*The New*

## UNDERWOOD MASTER

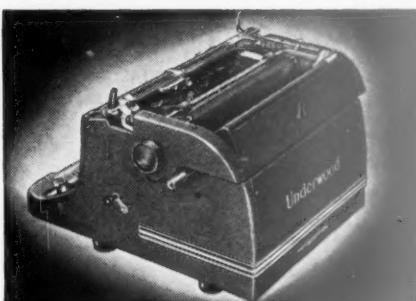
*Typewriter is Here!*

WHEN Underwood defies all tradition in typewriter design and adds a new machine to the greatest line of business typewriters in the world, it's your cue to telephone for a free trial immediately.

The new Underwood Master not only offers you an advance-styled machine. It offers greater speed, accuracy, simplicity and ease of operation.

Here is completely individualized touch. A custom-built machine could not possibly "fit" the typist better. The Master is literally tuned to the finger tips of each individual typist.

Only by seeing the new Underwood Master can you appreciate what a crowning achievement its launching represents. Note its Champion Keyboard, the Touch Tuning feature within easy reach of the typist's finger tips. Note, too, the completely sealed back—an exclusive Underwood feature that offers greater protection against dust and provides far quieter operation. Be sure to telephone for your free trial today. Every Underwood Typewriter is backed by nation-wide, company-owned service facilities.



*From every angle it's the world's outstanding typewriter.  
Note the completely sealed back—exclusively Underwood.*

*Typewriter Division*

UNDERWOOD ELLIOTT FISHER COMPANY  
Typewriters . . . Accounting Machines . . . Adding  
Machines . . . Carbon Paper, Ribbons  
and other Supplies

One Park Avenue, New York, N.Y.  
Sales and Service Everywhere



*Underwood Elliott Fisher Speeds the World's Business*

Copyright, 1938, Underwood Elliott Fisher Company

WORLD'S LARGEST MANUFACTURER OF TYPEWRITERS

MARCH 1938

PAGE 5

# Yours on Request

Purchasing agents will find it well worth their while to read the publications reviewed on this and the following pages. From among the many submitted to us, they have been selected by the editors as having greatest interest and utility value to purchasing agents.

To obtain copies, simply fill in and mail coupon at the bottom of this page.

**328.** In its 32 colorful and profusely illustrated pages, the Raymond Mfg. Co.'s booklet, "Spring Principles & Designs," presents a highly interesting account of the manufacture of springs plus much valuable information to buyers of all types of springs, wire forms and small stampings. Concluding the booklet are four pages of tables giving outside diameters of springs and figuring helical springs made of flat stock.

**329.** The 56-page "Riggers' Handbook" issued by Broderick & Bascom Rope Co. combines helpful information for buyers of wire rope with practical advice to users. "P. A.'s" will be interested in the illustrations of various types of wire rope slings, the tables of working loads, and the specifications of fittings such as sockets, links, rings, clips, shackles, etc.

**330.** Purchasing agents who spurn all but factual presentations will welcome "Cutting and Grinding Facts." This 56-page booklet, issued by Sun Oil Co., uses the case-study technique in showing methods of machine operations in leading metal working plants. Actual photographs of lathes, grinders and machines for milling, boring, tapping, broaching, drilling and cutting off, accompany the descriptions of the various examples which are cited to explain how scientific lubricants aid in increasing operating efficiency of machine tools.

**331.** Simplified wrench selection is provided by tables and other informative data appearing in "How to Select and Use Wrenches," a new 28-page booklet published by J. H. Williams & Co. The tables give correct wrench openings for U. S., S. A. E., American Standard Nut & Cap Screw sizes. An extensive variety of wrenches for industrial, railroad, automotive and general shop service are illustrated.

**332.** Its line of seamless flexible metal hose, detachable self-sealing couplings, self-flaring tube couplings and copper tubing is featured by Packless Metal Products Corp. in a convenient new Engineering Data File. Diagrams and assembly and installation photos accompany descriptive matter and numerous specification data sheets. Available in diameters up to 6" and cut to lengths to meet individual requirements, Packless seamless flexible metal hose is designed for use in virtually all types of industry.

**333.** Recently released is a folder describing Magnus 55-P, a new product of the Magnus Chemical Co. applicable for many and varied cleaning operations. Among its uses are washing painted and varnished surfaces, washing auto bodies, cleaning rest rooms, swimming pools, locker rooms, gymnasiums, etc. A major application is for the cleaning of linoleum and all types of floors—wood, marble, tile, terrazzo, etc.

**334.** A 12-page pamphlet devoted to its new line of arc-welding electrodes is announced by The McKay Co. Outlining procedures for flat, fillet, vertical and overhead welding, the pamphlet also provides specifications of electrodes for all-position welding, flat-position and fillet welding, general purpose fillet welding, A. C. transformer welding machines and cast iron welding.

**335.** A 30-page, 8 $\frac{1}{2}$ " x 11" Simplified Price List on Coated Abrasives issued by Behr-Manning Corp. covers a complete variety of paper, cloth and combination abrasives in sheets, rolls, belts, discs, etc. Among the uses for these products are metal work, metal polishing, wood sanding, floor sanding; also for lacquer, enamel and painting materials; and in leather tanneries, shoe manufacturing, shoe rebuilding, and other miscellaneous industries.

**336.** A pictorial demonstration of weighing operations in many varied industries distinguishes "Industry at Work," a handsome 32-page book published by Exact Weight Scale Co. The progress of modern packaging is indicated by fine photographs showing how production problems are handled by the country's leading manufacturers.

**337.** Case studies of savings in a few of the 350 specific industries using Signode methods are shown in the fifth edition of the "Guide to Better Packaging and Shipping Methods" just released by Signode Steel Strapping Co. Lower freight bills, faster and safer packing, less damage, elimination of pilfering, increased customer satisfaction, reduced container costs are advantages claimed for the Signode system.

**338.** Illustrations, capacities, dimensions, etc., of its line of cylinders, hoists and valves are provided in the Hanna Engineering Works' 24-page, 8 $\frac{1}{2}$ " x 11" Catalog 226.

**339.** Chronologs, the only instruments that keep a running record of time and a count of pieces on the job and prints this information on a chart, are illustrated and described in the National Acme Co.'s Bulletin No. 3707. Charts aid the text in explaining how the Chronolog controls idle equipment time, increases net production and spots waste. Chronologs are used in many diversified types of industry.

**340.** Actual savings of up to \$2,400 annually, effected by use of industrial vacuum cleaning equipment, are described by well known companies in "The Dollars and Sense of Modern Cleaning for Industry." This new 8 page, 8 $\frac{1}{2}$ " x 11" folder issued by Invincible Vacuum Cleaner Mfg. Co., explains in detail how large plants in every type of industry are increasing plant cleanliness while decreasing the annual cost, lowering insurance rates, improving employee morale, eliminating losses incurred by sickness and accidents, etc. Besides floor or general cleaning, equipment is available for cleaning machinery, motors, generators, conveyors, shelves, lighting fixtures, products before painting, etc.

**341.** A chart which specifies types of safety goggles to wear for protection against eye hazards in all principal industries has just been completed by American Optical Co. Designed to aid in the selection of proper safety equipment, it classifies eye hazardous operations by industries and recommends specific types of eye protection equipment which have been developed for each hazard.

**342.** Nu-Mark Manufacturing Co.'s rigidly constructed steel typewriter stands; dictionary, ledger and rate book stands; all-steel sectional letter files for privacy and finger tip control; and steel book ends, are some of the modernly constructed products which comprise Nu-Mark's line. All are described and pictured in an 8 $\frac{1}{2}$ " x 11" two-color, 4-page bulletin and on post cards.

(Additional listings on page 4)

**PURCHASING, 11 West 42nd St., New York, N. Y.**

I wish to receive the following literature:

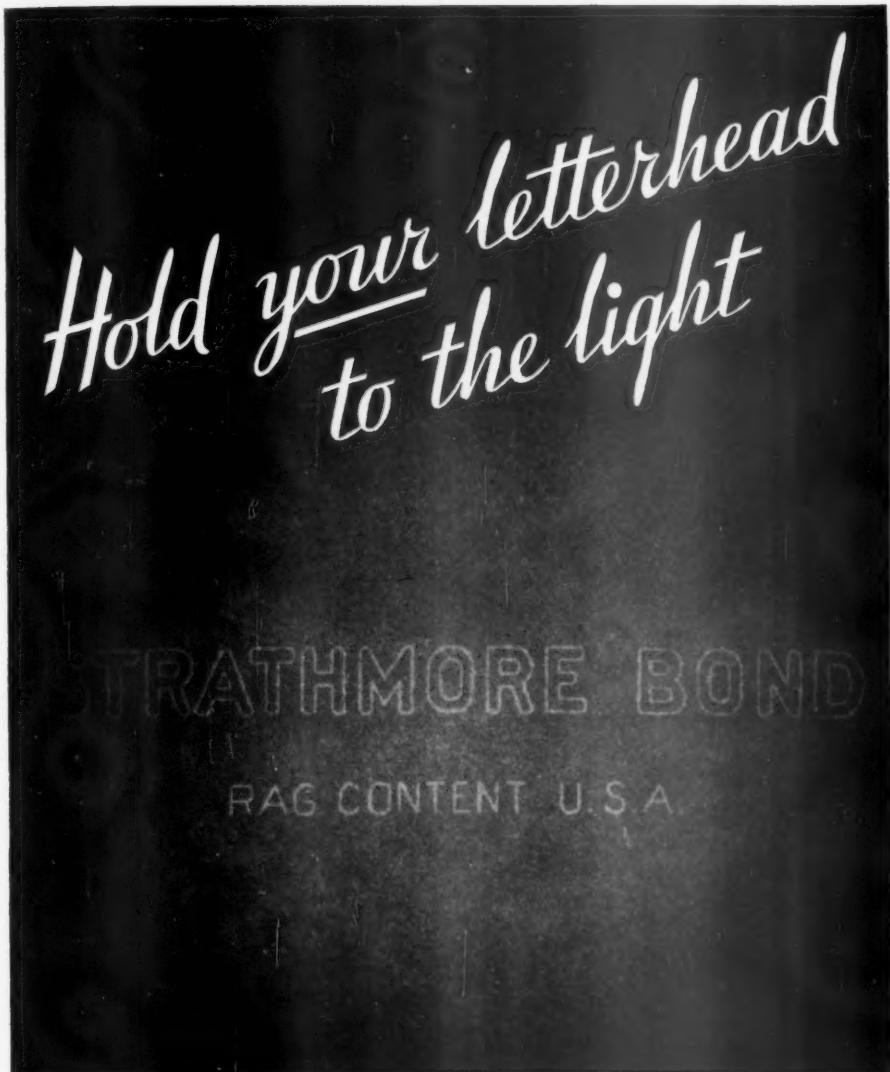
**Numbers:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**City:** \_\_\_\_\_ **State:** \_\_\_\_\_



**DOES IT BEAR THIS SIGNATURE?** The Strathmore Watermark, in every sheet of STRATHMORE BOND, stands for character in paper making...for fine letterheads with impressive, expressive qualities of texture and surface • A letter written on STRATHMORE BOND\* costs less than 1% more than a letter written on the cheapest paper you might buy. And on STRATHMORE PARCHMENT, the finest paper that can be made, a letter costs only 2.9% more. At so little difference in cost, such extra effectiveness is true economy.

\*Strathmore Bond, *America's leading 25% rag content bond, formerly known as Strathmore Highway Bond.*

THE STRATHMORE BUSINESS PERSONALITY CHECK LIST shows all the ways in which a business is seen and judged by its public, gives all the *appearance factors important to your business*. Send for your copy, Dept. T3, Strathmore Paper Company, West Springfield, Massachusetts.

**STRATHMORE** *MAKERS  
OF FINE  
PAPERS*

MARCH 1938

PAGE 7

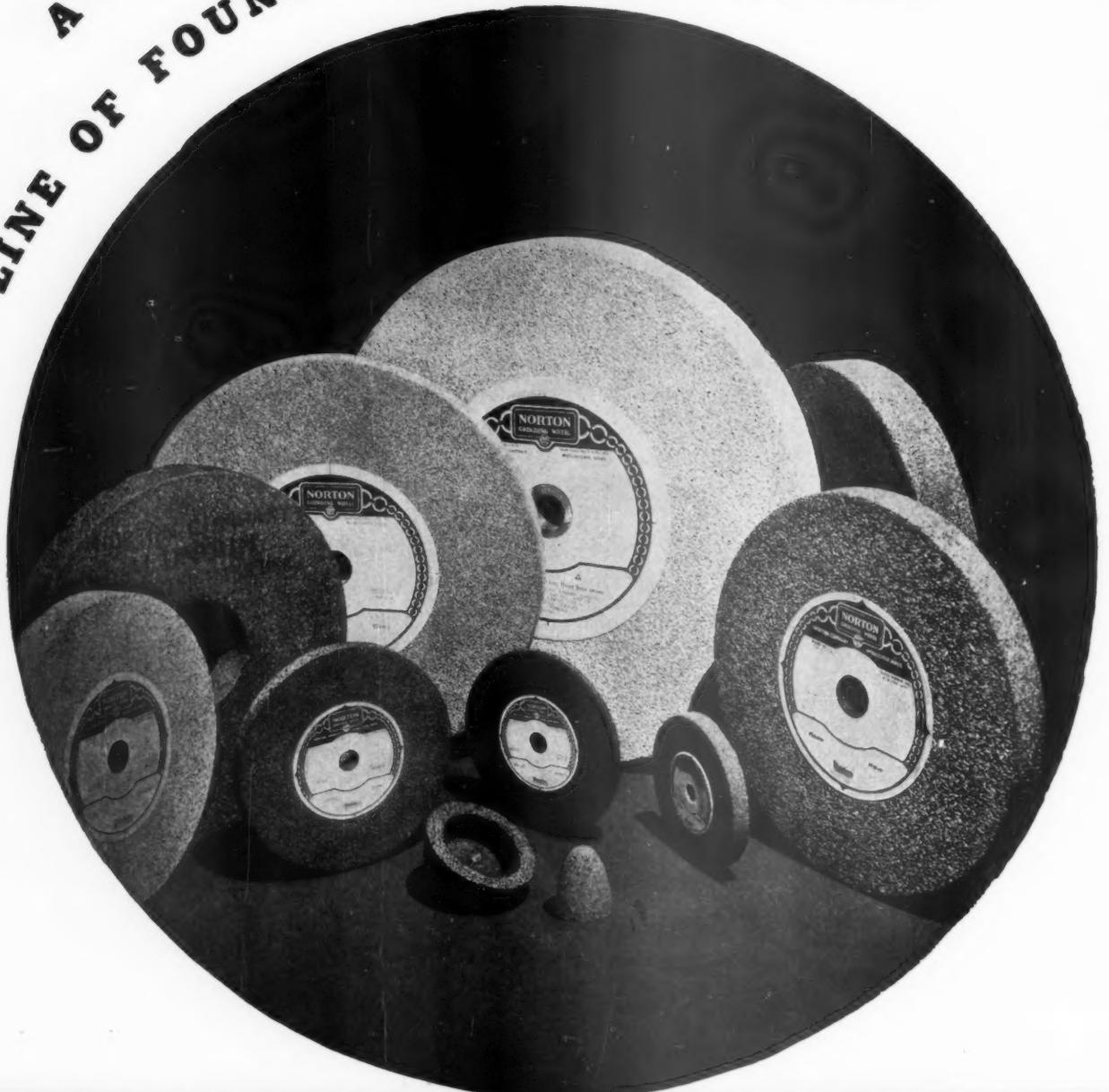
**STRATHMORE  
ADVERTISEMENTS**

**like this are telling the  
heads of big business  
firms about STRATHMORE  
BOND and STRATHMORE  
PARCHMENT.**

**When you specify these  
papers, you buy quality  
and reputation that THEY  
appreciate...and YOU get  
the most for your com-  
pany's money.**

**This series appears in:**  
**TIME**  
**BUSINESS WEEK**  
**FORBES**  
**NATION'S BUSINESS**  
**ADVERTISING & SELLING**  
**PRINTERS' INK MONTHLY**  
**SALES MANAGEMENT**  
**TIDE**

A COMPLETE  
LINE OF FOUNDRY *Wheels*



THE NORTON LINE of newly improved foundry wheels has the variety necessary for every requirement—Alundum, 15 Alundum and Crystolon abrasives; the new "B-E" vitrified, resinoid and rubber bonds, a wide variety of grain sizes, grades, and structures in each abrasive and bond; special filler treatments to reduce loading and improve cutting action with some metals. It will pay you in dollars to take advantage of these wheels—to let Norton engineers fit them exactly to your foundry grinding jobs.

NORTON COMPANY, Worcester, Mass.

NORTON ABRASIVES

# LUNKENHEIMER 125 lb. SP BRONZE GATE VALVES



Double Wedge Disc  
Taper Seat  
Rising Stem



Single Wedge Disc  
Taper Seat  
Non-rising Stem

These two valves offer many advantages to users of 125 lb. SP bronze gate valves.

Their design provides unusual strength and ruggedness—accurate machining is to close tolerances—materials exceed accepted standards.

In short they possess the inherent quality, characteristic of all Lunkenheimer Valves, which means they will stay tight and will give added values in long service life and low cost upkeep.

For detailed design and construction features write for circular No. 544 shown below or ask your Lunkenheimer distributor for a copy.



THE LUNKENHEIMER CO.  
"QUALITY"  
CINCINNATI, OHIO, U. S. A.  
NEW YORK CHICAGO  
BOSTON PHILADELPHIA  
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

BOILER  
MOUNTINGS

**LUNKENHEIMER**  
VALVES

LUBRICATING  
DEVICES

# G-E LAMPS

## MEET EVERY INDUSTRIAL LIGHTING NEED

General Electric makes a lamp for every industrial lighting service. A few of them are shown here. MAZDA lamps made by G-E represent the result of more than 40 years of research and development. Each of them must pass 480 checks and inspections in manufacture to guard against imperfections affecting their performance.

In addition, General Electric makes mercury lamps which differ radically in principle from incandescent MAZDA lamps both in operation and in color quality of light produced, but are suitable for a wide range of industrial applications. For detailed information about any of these lamps, see the nearest General Electric Lamp Sales Office.



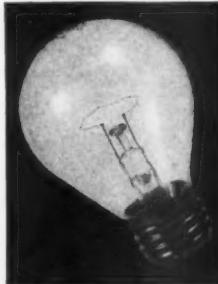
**GENERAL LIGHTING SERVICE** lamps fulfill most lamp requirements for ordinary industrial use. Up to 1500 watts.



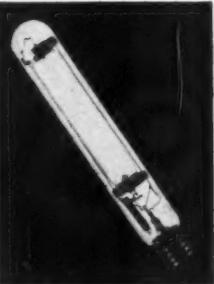
**NEW 300-WATT MAZDA** lamp with medium screw base is designed to give more light from many fixtures using 200-watt lamps.



**FLOODLIGHTING SERVICE** lamps are for use in floodlighting projectors, giving a narrow, long distance beam of light.



**VIBRATION SERVICE** lamps are made to withstand high-frequency vibration as produced by high-speed machinery.



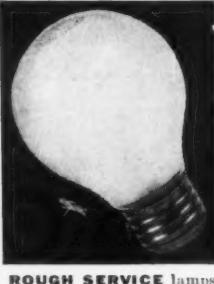
**MERCURY LAMP** (400-watt size) with conventional screw base for use in standard types of reflecting equipment.



**NEW 1000-WATT** medium bi-post MAZDA lamp is designed for such services as general lighting, floodlighting, and airway beacons.



**SILVERED BOWL MAZDA** lamps, with a coating of mirror silver on the bowl, provide high-quality indirect illumination.



**ROUGH SERVICE** lamps are made to withstand severe shocks and bumps such as with extension cords in garages.



**SPOTLIGHT SERVICE** lamps... with prefocus bases for use in spotlights with prefocus sockets... require no focusing adjustments.

**GENERAL**  **ELECTRIC**

## F. O. B.

(Filosophy of Buying)

Our What-This-Country-Needs Department learns from Mr. Harry Boyd Brown, Merchandising Mgr. of Philco Radio & Television Corp., that w. t. c. n. is some good high-pressure selling, which, he continues, "simply means seeing to it that the public buys the things it ought to have."

Nevertheless, first award for the Definition of the Month goes to Bill Oliver of Republic Steel. Says Mr. Oliver: "A super salesman is a fellow from the home office—with a lower price."

We had just finished reading Joe Nicholson's excellent report for 1937, with its usual impressive record of savings for Milwaukee taxpayers, when we learned from the Rome (Ga.) *News Tribune* that the office of City P. A. in that municipality had been abolished "effective immediately, as a move towards reducing expenses of city government."

And from Fred Mispely's report on spending 18½ million dollars for the State of California we glean the surprising fact that tobacco purchases of \$160,000 are 27% higher than the year's expenditure for toilet and laundry soaps.

Counsel from Washington: "Our program seeks a balanced system of prices such as will promote a balanced expansion in production." We vaguely recall a budget that is also in need of balancing.

Curious Cuthbert wonders whether the holding companies are losing their grip.

# CHAMPION



*"It's the Best"*

Champion quality begins deep underground in nature's finest bituminous coal seam and ends in the ultra-modern Champion Mechanical Cleaning Plants where every

ton is scientifically cleaned, screened, sized and graded to meet the varying requirements of the coal consuming markets. Champion Coal is an exclusive product of

## PITTSBURGH COAL COMPANY

General Sales Offices: Henry W. Oliver Building, Pittsburgh, Pa.

### District Sales Offices:

Boston, Mass., Baltimore, Md., Buffalo, N. Y., Cleveland, Ohio, Detroit, Mich., Erie, Pa., New York City, Pittsburgh, Pa., Philadelphia, Pa., Sault Ste. Marie, Mich., Utica, N. Y., Youngstown, Ohio

PITTSBURGH COAL COMPANY OF WISCONSIN, Duluth, Superior, Minneapolis, St. Paul

PITTSBURGH COAL CO., LTD., Hamilton, Ont., London, Ont., Toronto, Ont., Windsor, Ont.

MILWAUKEE WESTERN FUEL COMPANY

Milwaukee, Wisconsin

# COAL

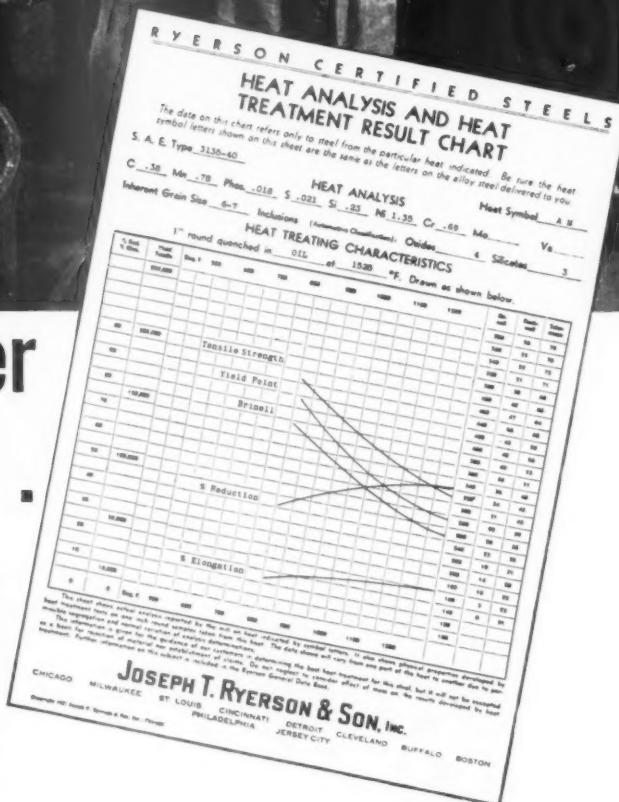


## A Steel Service Never Before Attempted . . .

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# The Coal Price Fiasco

ON February 24th, exactly ten weeks after the effective date of the minimum prices on bituminous coal under the Act of 1937, the entire schedule and marketing rules were withdrawn by the National Bituminous Coal Commission. The statement promises that they are to be reinstated later in such a way as to avoid "technical objections." The action, prompted by vigorous resentment on the part of consumers, was taken on the recommendation of both operators and miners. It marks the third failure within five years to fix prices in this field. Despite the determined sponsorship of the government, the accumulated experience of the earlier efforts, and the most elaborate machinery yet devised to carry out the plan, the only accomplishment has been to involve the industry in a hopeless and embarrassing entanglement.

The enormous administrative difficulties of the scheme were foretold at the N.A.P.A. convention nine months ago; also the inevitably discriminatory nature of the schedules, even the approximate advances that might be expected—correct within a fraction of a cent.

The "technical objections" on which the schedule was challenged in the Courts were mainly concerned with the fact that the public hearings required under the Act were blandly dispensed with. Presumably it had become apparent that if that formality had been observed, the industry would have been denied the benefit of the Act until after the peak season had passed. Commissioner Tetlow still believes that his action in this respect was right. To dispense with the "window dressing" was a tactical error, but at least it was engagingly frank. For this was just one more case of a price objective, rather obviously determined in advance.

We can sympathize with the coal industry, and with other industries, in their desire for a higher price level. But that is not the issue. The price objective in itself is not a proper objective, because it is essentially meaningless and because it is incapable of doing what is expected of it. Price is a relative factor. The theory that a 1926 price level will automatically bring about 1926 economic conditions is wholly fallacious, unless we also reproduce 1926 income, employment, production, stock quotations, and national psychology. Price is even a minor factor in this complex picture. We need production and confidence. Then prices will take care of themselves.

Nevertheless, as a nation, officially, we continue to set up price ideals as the economic goal. We aim to bring prices up, then to keep them down. We have curtailed supply and paid the resulting high prices to foreign suppliers. We have devaluated our currency, with scarcely a resulting ripple. Now we are undertaking to reach a predetermined price level on a comprehensive list of about fifty diversified commodities, to establish these prices not only individually but in definite relation to every other price. It is an ambitious plan, but with a consistent record of failure where only one commodity is involved, it does not rate very highly as an example of realistic intelligence.

In the old story, the obstinate gate crasher who found himself out in the gutter after each of three successive attempts, finally dusted himself off with the sage observation that at least he was able to take a hint. How often will our highest councils have to have such a demonstration before they reach a similarly reasonable state of mind and set an objective that has some chance of practical attainment?

STUART F. HEINRITZ, EDITOR

# General Stores Operation

FRANK T. McEVOY

Purchasing Agent  
New York Power & Light Corp.  
Albany

DURING THE PAST TEN years we have seen many changes take place in the corporate structure of the utility picture. Through mergers, consolidations, and other causes there has resulted a more concentrated management, and with that trend came a movement of operating headquarters, a centralization of operating practices, and to harmonize with this picture, there were necessary many alterations to the purchasing and stores chart. Perhaps even before the final answer in that respect was reached, there was the geographical phase to be considered.

After the merging of companies we found it no longer necessary to maintain some of the stores locations in many of the areas where they existed, and this fact, coupled with the curtailment of construction activities during the depression period, brought about a good many changes in this phase of our work throughout the succeeding years.

In some localities, as in ours, there came the clamor by independent merchandise dealers, for a discontinuance of the sale of appliances by utilities, and whereas we were forced into the field at a time when it was being sadly neglected and really needed development, we were not anxious to continue it if we could be sure the dealers were ready to take over the job. We stopped the general sales of merchandise articles directly to the consumers in 1933. This move alone injected a new angle into the stores picture, but of

Address at the Midwinter Conference, Public Utility Group, N.A.P.A., Chicago, February, 1938.

course after we had cleaned house of the then existing stocks, it made our job easier. This brief résumé brings us down to present-day operation.

The New York Power and Light Corporation is a gas and electric operating company, serving upward of 206,000 electric consumers and 124,000 gas consumers. Its lines extend through 13 counties. It operates 22 hydro stations and 2 steam stations. Gas is manufactured at 3 points. It is the eastern part of the Niagara-Hudson System, whose interconnections comprise more than 100 generating stations, which in turn are interconnected with the Consolidated Edison System. These facts are cited merely to give an idea of the type of operation which forms the basis for the succeeding statements concerning its stores work which, we believe, is an important part of its business since it has to do with the handling of substantial sums constantly invested in materials and supplies.

## Centralized Warehousing

The principal stores unit is a central warehouse, located at Albany and occupying a portion of the same building which houses the (also centralized) operating and engineering headquarters. Then there are 12 district storerooms, 8 of which carry both electric and gas supplies, while 4 are located in areas served by electricity only. Ten of these storerooms are located an average distance of 36 miles from the central warehouse and the supplies which move between points in this group are transported by our own equip-

ment, while those for the smaller areas move by outside trucks. While there are 3 methods of securing supplies for district storerooms, the warehouse is the principal source. It operates 3 shifts, is open 24 hours each day, and is always available for emergencies. It supplies most of the standard items which are used generally throughout the system, if they are shipped in from out of town sources. A list of the articles warehoused was at first supplied all district storekeepers and they soon became familiar with the families or groups of items there carried.

The supply truck is under the control of the warehouse and delivers to all the important points once each week. In addition to hauling the materials and supplies replenishments, it handles such items as meters and transformers. The control, repair, and the records of these items are also centralized at Albany. And we find those in need of repair, or subject to final inspection before condemnation, on the return trips, together with such items as scrap wire, which is not permitted to be sold in all areas in which it is taken down, but rather is accumulated at one point for preparation to be later sold in carload when the market is right.

In our plan, aside from being a local storeroom, the central warehouse has two main functions: it not only operates as a central supply depot, but also as a clearing house. From it are distributed the many articles purchased from out of town suppliers and when, on rising markets, it seems advisable to fill in with some additional stocks, these are concentrated there. One of its values consists of its ability to purchase and store materials such as wire, cross arms and large sizes of pipe, in carload lots, for later distribution to the smaller centers, and to take advantage of the highest quantity discounts offered. Here too we find a proving ground for employees. Future selections for positions in the purchasing department, as well as for district storekeepers, will be made from the men who are training there.

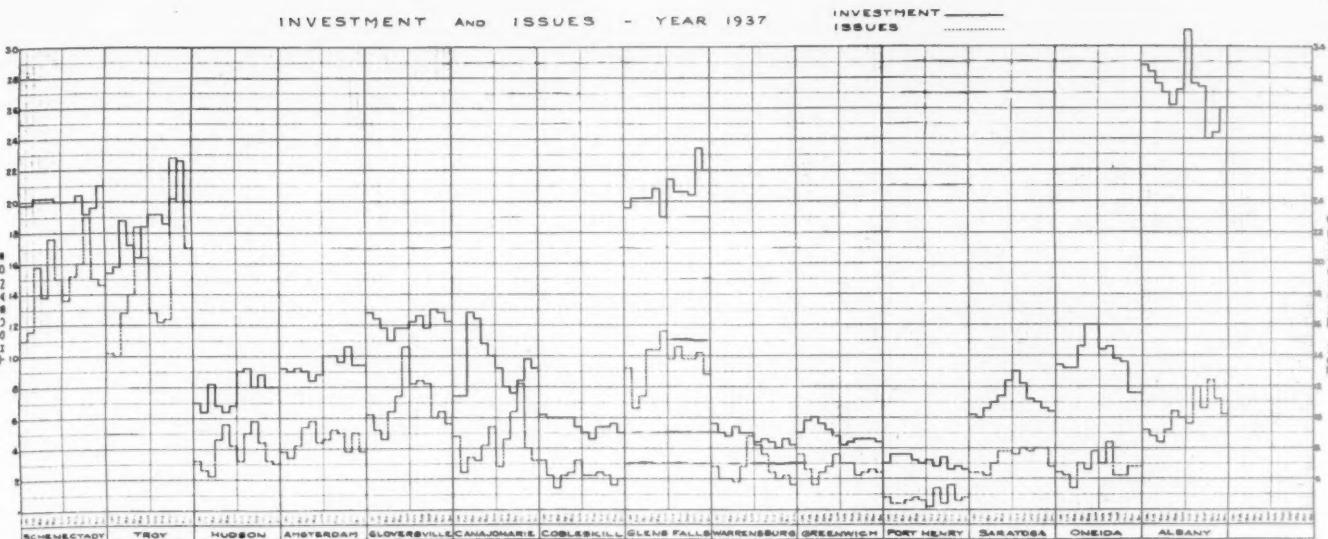


Figure 1

As a clearing house, it endeavors to facilitate the movement of all usable materials, by assembling those which accumulate from job overages, from erroneous estimates, or after removal from service. All such surplus supplies are, with proper approval, moved from the district storerooms to the warehouse, through the return trip of the supply truck. Here they are examined, and if there appears to be additional life, they are stocked and made available for any area which might have need for them.

Through this focal point pass all purchase requisitions, other than those for equipment, or articles which are of such a nature that they are obviously not stored there. Here they are given a final check

not only to determine whether like items are on hand, but also to develop any substitutions. To stimulate the prospects of substitution and to foster a use for on hand materials, a list is prepared annually of all surplus items including complete specifications and these are placed, not only in the hands of engineers or others who originate and handle the work, but they are also broadcast throughout the balance of the Niagara-Hudson System. This safeguard would be very difficult without the concentration of surplus materials at one point.

#### Blanket Orders

The second method of securing materials is by means of what we call "Blanket Orders." There are

several suppliers of standard, approved supply items, which are in regular and constant demand, who carry stocks in one of the key cities of our system, such as Albany, Troy or Schenectady. Nearly all of the materials included in this plan belong to the classification of shelf stock, and include such families as line hardware, smaller sizes of pipe and fittings, tires and tubes, etc. The purchasing department sends to each supplier an order, listing the items we will draw, but not quantities. The supplier is expected to carry stock consistent with the requirements.

These orders are priced and bear a stipulation to the effect that they are cancelled if prices change, and may be withdrawn at any time for any other reason at our option. Copies, of course, are distributed just the same as are copies of ordinary orders and, when the plan is initiated with any new supplier, a letter accompanies the order telling how releases are to be made, and requesting that invoices be rendered either monthly or semi-monthly, dependent upon the volume.

At the same time, each storekeeper is requested to release his supplies twice each month and not to ask for shipments daily, or several times each week. By the same token also, he is asked to refrain from too large releases so as to assist the supplier to regulate his stock in keeping with the average demand.

#### ACCUMULATIVE TURNOVER CHART-12 MONTHS ENDING DEC. 1937

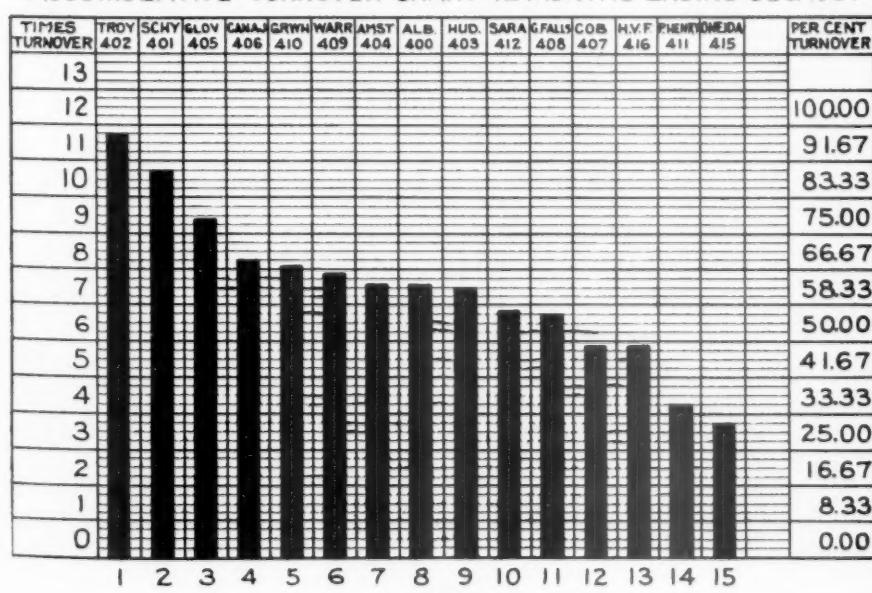


Figure 2



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Releases against these orders are made by direct contact of storekeeper with supplier and shipments are made by public truck. We feel the merits of this practice to be threefold:

1. It reduces the number of requisitions which have to be handled through the purchasing department, with a similar or greater reduction in number of purchase orders written.
2. It reduces the number of invoices handled.
3. It is a valuable aid to a healthy turnover for, in most cases, it brings the articles ordered into the storeroom within 48 hours.

This practice is facilitated by the fact that leased telephone lines connect all the important cities of our system and, where they exist, releases are 'phoned in, otherwise they are written. In other words, it is a simplified method prescribed for securing those materials which are commonly and regularly used in our business and it does build up the confidence we have in our storekeepers as field representatives of the Purchasing Department.

### Turnover

Now we come to the subject we might call the "Goal Line" of storeroom operation, namely, a good and satisfactory turnover. I think we all agree that the better the turnover, the lower the investment, which results, of course, in less expense through reduced handling costs, less insurance, interest charges, etc. There are several methods in use for determining the proper quantities and appropriate items to be maintained.

Whether the basis be percentage turnover, times turnover, days or weeks supply, or any other, still in the final analysis we are trying to maintain minimum quantities consistent with our needs; in other words, we are aiming to narrow the spread between the two curves, as they appear on the chart titled "Investment and Issues" (Figure 1). The solid line represents "invest-

ment" and the dotted line "issues." The dollar values are shown in thousands on the left, which figures apply to all storerooms, with the exception of the one on the right, which is the warehouse, and the ten thousand figures on that side represent the Materials and Supplies dollars invested and issued at that point. In all cases the figures are plotted by months for the calendar year 1937. We can tell at a glance the storerooms where the best turnover is being maintained. Wherever you see the two curves running close together, you find a correspondingly high average from that location on the turnover chart (See Figure 2). The reason, of course, is that after all, the closer the relationship of issues to material investment the better the turnover.

For a long time, in our companies, we relied upon the frequency of our visits to storerooms to determine whether there were on hand either items or quantities which were not needed and, although we did watch over every storeroom in this manner, we still did not arrive at turnover figures we felt were satisfactory. We also found that when, through observation, we discovered items which had the appearance of not moving rapidly, the storekeepers would refer to them as emergency items, or would tell us that superintendent so-and-so wanted those items retained for emergency repairs. In other words, we were helpless to move anything which, in the opinion of the local operating men, was needed for emergency repairs and so we proceeded to develop a standard list of minimum quantities of emergency transmission items, for the Electric Department and for the Gas Department.

The first one we worked up was not perfect, neither could we immediately secure the full cooperation of the various superintendents which we would ultimately need to bring about our objective; but we did get a start and during the succeeding two years through various discussions, there came revisions, all approved by all the interested superintendents, and which now are

*Continued on page 53*

# PAINT STANDARDIZATION

**WILSON H. TOWNS**

Vice President  
Towns Paint Co., Inc.  
Buffalo

THE SUBJECT OF PAINT standardization is not a new one, but lack of standardization has resulted in the loss of many thousands of dollars a year not only in the excessive cost of buying the wrong kinds of paints for certain specific requirements, but in damage caused by the faulty protection resulting from an improper choice of paint for different types of work as well as many other features which I will later enumerate.

I have seen instances when utility companies have used house paint on transformers and gasholders. This type of equipment is subject to extreme exposure, therefore requiring a special type of metal paint.

The purchasing agent cannot be expected to be a paint expert nor can he be expected to set up proper paint specifications for the various requirements for which he has to buy. It is a subject which is the life study of many brilliant chemists and upon which millions of dollars, literally, have been expended in laboratory research.

One of the purposes of standardization is to set up methods whereby the purchasing agent or the layman can't go wrong—so that the right type of paint, the correct formula, is used for the special requirement at hand.

But the advantages of standardization go further than this. Considerable saving in the purchases of paint is an immediate result.

The paint manufacturer will furnish products based upon years of experience, that are properly adapted to every requirement, and these products will be of undeviating quality and undeviating color trueness.

If you buy a certain paint today for a specific purpose and two years hence you wish to make repairs to your building such as running pipe lines, or putting in extra partitions, etc., you will be able to touch up or duplicate the job at hand and you can do so without the necessity of doing a complete paint job.

Standardization means also that you make savings in inventories. Instead of keeping a miscellaneous assortment of paints you would have only the limited number of standard items on hand. You would not have to spend time and trouble trying to locate a duplicate of a certain paint and color which you had used two or three years before and which might even now be a discontinued item. Your standard chart will immediately tell you what to order.

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Address at the Midwinter Conference of the Public Utility Group, N.A.P.A., Chicago, February, 1938.

Standardization means also that if you have branches you can transfer surplus stock from one location to another.

Paint standardization has been adopted in the automobile service station field by such companies as Ford, Chevrolet, and Packard, where they wish to have a uniformity of color schemes throughout the country in their respective networks of service stations.

My company developed these standards and spent no little time in perfecting the right formulas for the various needs. After the plan had been in operation it was discovered that the advantages went far beyond the original purpose of uniformity of color schemes. First, longer lived finishes were perfected; second, costs per gallon were lowered; third, paint inventories were reduced from wasteful assortments of paints which were often ill-suited for the specific need.

One of the large utilities in the east, Niagara-Hudson, became interested in this development and after study they have today a tailor-made set-up, so to speak, of paints and finishes especially compounded for certain needs such as garages, storerooms, buildings, etc.

It will be helpful to analyze two typical applications of paint standardization in the utility field.

(1) *Recommended standards for the utility garage.* The color scheme is not the dream of an interior decorator. Every color was chosen because of a definite practical reason. Side walls and ceilings are finished in aluminum; dados in a medium shade of green. This latter color was selected in place of gray for the reason that the exhaust from the cars on a gray surface shows up badly. A red stripe, two inches wide, is used to break between the side wall and the dado. Benches are done in aluminum; all tools and equipment are finished in red. The reason for finishing all tools and equipment in red is due to the findings made by national manufacturers of tools that there was less breakage and less damage to cars and tools where this color was used. All traffic marks are carried out in white quick-drying traffic paint; floors are all finished in a gray concrete floor enamel.

We have selected aluminum paint for the side walls and ceilings of the garage. Exhaust fumes and the dirt and dust that is brought in by cars will not cling readily to a surface finished with aluminum. Also dirt is not as noticeable on an aluminum surface.

We recommended that the dado be carried up 72" from the floor. By carrying it to this height, mechanics working around the cars will not soil the walls. We



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also recommended that stalls be lined on the floor with zone marking paint so that each car is in its proper place, assuring you of the use of all available space. Some companies have even gone as far as to place numbers on the walls so that each car has a regular berth.

The floors have all been coated in gray concrete floor enamel. This material is extremely waterproof and it is very easy for a man to go over a floor with a broom, removing excess amounts of grease and dirt. It likewise is an aid to keep the concrete floors from disintegrating.

(2) *Recommended standards for the utility storeroom.* Side walls and ceilings are finished in flat white; dados in medium gray. A black stripe, two inches wide, is used to break between side walls and ceiling. Bins, racks, and tables are finished in aluminum or an alternate of light gray enamel. Traffic and identification lines in quick-drying traffic paint, and floors in gray concrete floor enamel.

We recommend the use of white for side walls and ceilings because white has a reflection value of 84% compared with aluminum light reflection value of 41%. In storerooms where orders must be filled and stocks inventoried, it is necessary to have all light possible.

We recommend the dado to be carried 54" up from the floor.

Bins are finished in aluminum or light gray instead of olive green that has been used so much in the past, because materials can be seen and inventoried far easier. This equipment is reflecting light rather than absorbing it.

Symbol numbers are stenciled on the traffic lines to assist in keeping materials in their proper place.

I believe you will agree with me that there is nothing elaborate in these standards and that it would be worth while to adopt standards that could be used by all public utilities. It is simply a matter of setting up a chart, subdividing the various classifications of requirements such as metal finishes for transmission lines, structures, gasholders, etc; floor enamels; wall coatings; aluminum vehicles, and machinery finishes, and so on. It is recommended also that you tie in with the standards for pipe line colors as adopted by The American Society of Mechanical Engineers and the National Safety Control.

Then under each classification should be listed the various colors or special formulas. Each item can be assigned a permanent company number.

Such a chart, once and for all, will take the guesswork out of paint buying. You will know you are getting the scientifically right material for each specific need; you will know that you are getting uniform quality; you will know that you are getting standards which represent experience, plus the skill and knowledge of the best research laboratories in the country; you will know that you are not getting merely the personal recommendation or guesswork of some salesman or of someone who decides upon a certain paint or color just because it looks pretty.

# SILHOUETTE STUDIES

## 24: Howard Thompson Lewis

WHEN PURCHASING AGENTS in the coming business generation find life a little smoother, with management more keenly aware of the proper place and the potentialities of the purchasing function, and ready to let the purchasing man capitalize on these opportunities for more effective service—a large share of the credit must be given to a lean, dynamic and far-sighted educator at Cambridge, who has done more practical and constructive work than any other one person in extending the horizon of business administration to include a reasonable consideration of the buying process.

To watch Howard Lewis skilfully lead his graduate classes at the Harvard Business School through an analysis of the case studies he has culled from hundreds of business experiences in which purchasing has played a critical part, is to realize just how far education in purchasing has come since the first evening vocational courses were established less than two decades ago. To be sure, the class is no longer unique. The soundness of his premise and his presentation, and the fact that he has made excellent teaching material available for general use, have contributed largely to the wider acceptance of this relatively new subject in the business curriculum. But the vision and the courage of the pioneer are his.

It is significant, too, that the course which started as a small seminar group in 1932, and which is still offered purely on an elective basis, has grown steadily in its appeal. The current enrollment of one hundred twenty-five is the largest on record by a substantial margin, and ranks as the third largest elective course in the school. The class attendance is regularly augmented by a group of his faculty colleagues, eager to get this new viewpoint on industrial organiza-

tion. Interest in purchasing has infiltrated into other departments, and the course is accepted for credit in both the sales management and industrial management groups.

Lewis is a realist. He has not over-dramatized nor over-stressed the subject. His objective is to establish a reasonable and open-minded attitude toward the buying function, an appreciation of its involvements and implications in the general business scheme, and a recognition of what constitutes good procurement, that management may profit by the often-neglected possibilities inherent in this field. Purchasing does not ask for more.

HOWARD T. LEWIS WAS BORN at Oshkosh, Wisconsin, July 15th, 1888. His family was of Scotch and English extraction. His father, a florist in England, continued that vocation in his new western home. The love of growing things was a part of the boy's heritage; it is apparent today in a sun room green with plants at his Belmont home and in the healthy potted vines and cactus which adorn his busy, book-lined office in Morgan Hall. Another heritage was a deep respect for education, which he still regards as a continuing process, never quite completed, and worth all the sacrifice and effort it may cost. That eager intellectual curiosity and thoroughness of research are among the inspiring attributes of his teaching.

He was enrolled in the Oshkosh Normal School (now the Wisconsin State Teachers College) and earned a diploma by completing the entire thirteen years' course, which carried through from primary grades to teacher training and practice. At that time he was not definitely committed to a career in education, but since it presented a logical means for the continuation of his own studies he spent a year as school principal at

Arbor Vitae—a little lumber town in northern Wisconsin that has since joined the roster of "ghost towns" as its timber resources were exhausted and its industries moved on.

With the funds thus acquired, he resumed his studies. Two busy years at Lawrence College, during which he dabbled in debating, oratory and dramatics, played on the basketball team and quarterbacked the eleven, earned for him his Bachelor's degree. This was followed by two years of graduate study in economics and government on a fellowship at the University of Wisconsin, earning the Master's degree in 1911. No stranger to hard work, the vacation intervals found him engaged in a sawmill, reporting for a newspaper and as a day laborer in a brick factory. But the fall of 1912 saw him finally established in his proper sphere, as a teacher of history, economics and government at Hiram College in Ohio. He has been in educational work ever since.

Lewis' interest in purchasing was a very gradual development. His educational treatment of the subject has been a carefully considered undertaking. But it is thoroughly logical and characteristic in the light of his progressive record.

In the fall of 1914, he left Hiram to take charge of the Department of Economics at the University of Idaho. His natural tendency away from the strictly academic phase of his subject showed itself in the organization of a Business Administration course, which at that time was still considered something of an advanced and daring innovation in University circles. However, it was a successful innovation, and over the next six years he built the new department up to the point where a faculty of five members covered the problems of statistics, accounting and finance on a true collegiate standard.

This experience embraced the war years, and another opportunity for first hand industrial contacts presented itself. Rejected for military duty on account of his eyesight, Lewis put in some intensive and exciting work tracing acts of sabotage in the lumber camps of the surrounding neighborhood, which were infested with members of the I.W.W. In that process, he saw industry in the raw, and acquired the foundation for that dramatic penetration to the roots of a business situation that characterizes his work.

By 1920, his reputation as a teacher and administrator had spread. He became Professor of Business Administration at the University of Washington, and shortly afterward was appointed Dean of the College of Business Administration, which had an enrollment of some 1,500 students. During his six years in Seattle, he was sent on a four-month trip through the Orient as a representative of the National Foreign Trade Council, which was for the first time actively inviting the business interests of Japan, China, Korea and the Philippines to participate in a convention held on the Pacific Coast.

From Seattle, he went half way round the world in the other direction, to spend the better part of a year lecturing at Rome—in English and Italian—on a Westinghouse fellowship. Besides his regular courses at the Higher School of Economics, he spoke on American business conditions and methods at several of the other Italian colleges and universities. This experience was supplemented by two months of observation and study of business in England and France.

In the fall of 1927, he came to Cambridge as Professor of Marketing in the Harvard University Graduate School of Business Administration. He still occupies that chair but his responsibilities have widened with increasing administrative duties and with his work as Director of Research.

**A**S A SPECIALIST IN INDUSTRIAL marketing, he was of course aware of the purchasing executive's position on the other side of the trans-

action. In the continual search for factual material to be used in Harvard's "case system" of instruction, he came into contact with a number of outstanding purchasing men and developed an appreciation of what a constructive buying policy could accomplish. He began a personal study of purchasing, and had already discussed the subject with the Dean before the educational activities of the National Association of Purchasing Agents helped to crystallize his interest.

In his official capacity at the University, he was the natural point of contact for the N.A.P.A., which had by this time developed its program to the point where it had something tangible and adult to offer the established business curriculum. Lewis was receptive but non-committal. He conferred with the Educational Committee of the Association and was further impressed. A delegation from the New England Association brought to his attention the existence and availability of basic material on the buying function.

Lewis was interested to the extent of sending an observer to N.A.P.A.'s Buffalo convention of 1929, and on the basis of a favorable report, he went in person to Chicago the following year. At that meeting he was convinced of the solidity and the serious purpose of the purchasing group. He was sold on the fundamental importance of recognizing this function as a part of marketing and industrial organization.

With characteristic energy and enthusiasm, he entered whole-heartedly into the educational program of the Association. He provided what it had previously lacked, and what purchasing men had been unable to do for themselves, bringing to it the professional approach of the experienced educator. This presently culminated in the preparation of the first textbook on buying specifically designed for classroom use ("Industrial Purchasing," compiled under the auspices of N.A.P.A. and published in 1933). In 1934 and 1935 he wrote N.A.P.A. pamphlets Nos. 18 and 20—"Purchase Contract Clauses" and "Procedure for the Handling of Samples." In 1935

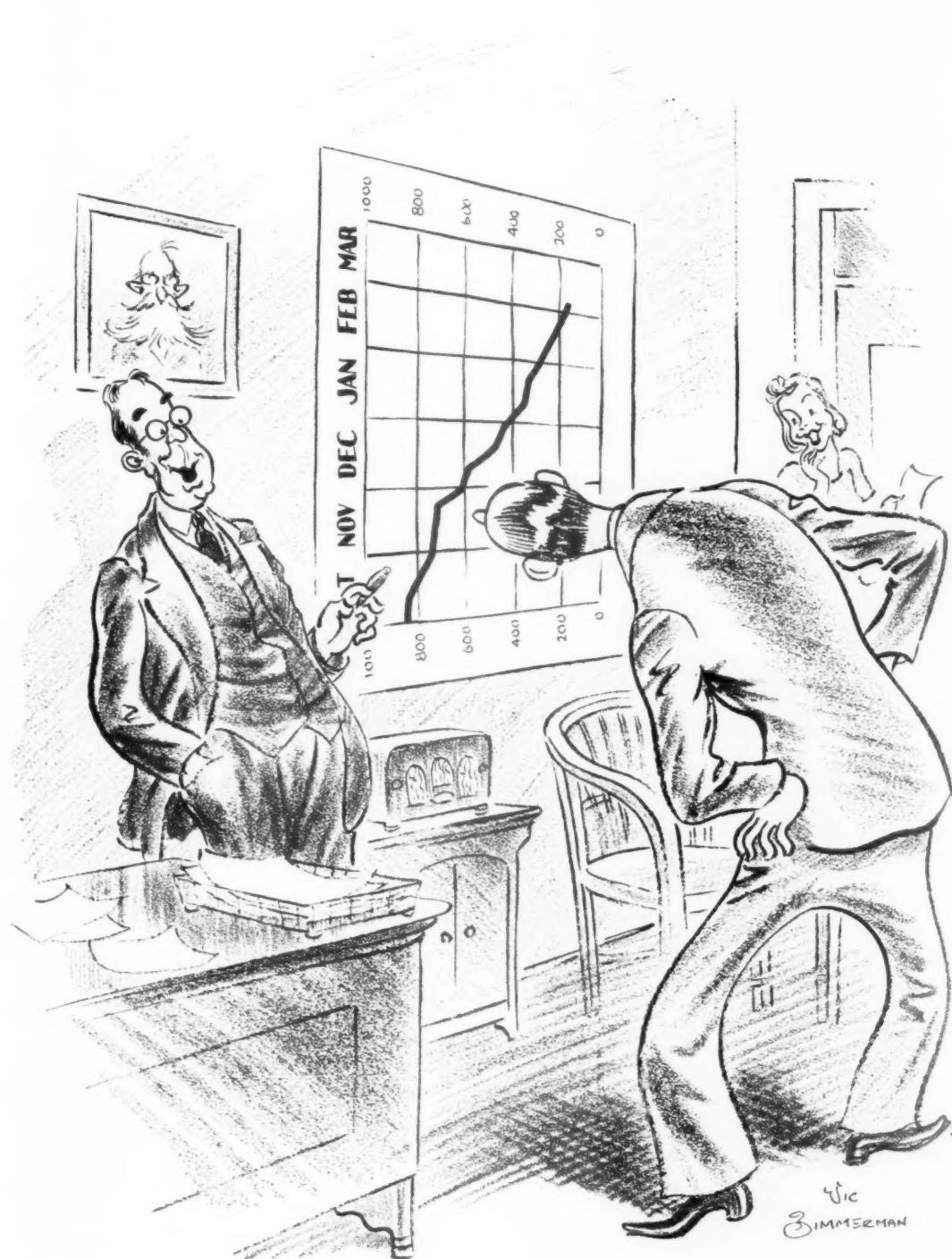
he also brought out a text of case studies ("Problems in Industrial Purchasing") intended primarily for use in the Harvard Business School. Meanwhile, his course in procurement had gotten under way, and the subject enjoyed its first formal recognition as an integral part of a comprehensive course in business administration of high graduate standing. More recently, he has been of great service in formulating standards for judging the students' contest for the Boffey Award, and is contemplating a complete revision and rewriting of the text material in the light of actual teaching experience. His special studies on reciprocity and on the cost of purchasing promise to contribute largely to a proper evaluation of buying policies and practices.

**A**S A RESULT OF THESE events, purchasing men have come to consider Professor Lewis and his accomplishments as so thoroughly their own, that they are likely to overlook the broader aspects of his work. His major field is still that of marketing, of which purchasing or procurement is a special phase. As a teacher, he is popular and effective, having few peers in the classroom discussion method, which he invests with a stimulating drive, covering his subjects rapidly, searchingly and thoroughly, and getting the students to think through their case problems.

In the research field, he made a five-year study of the commercial aspects of motion picture distribution and exhibition, and his two books on this industry are the standard and authoritative references. He prepared the articles on the motion picture and radio industries for the Encyclopedia of the Social Sciences. Among his earlier works are a study of the economic resources of the Pacific Northwest and a treatise on adapting school curricula to community conditions.

In the field of public service, the man who was once rejected for military duty now holds a high commission in the Specialist Reserve Corps assigned directly to the Assistant

*Continued on page 60*



*"I know it's a trifle inconvenient, but the psychological effect is better."*



**700,000**

## **Tons of Steel**

**HAYWARD NIEDRINGHAUS**

President, Granite City Steel Co.

**A** DESCRIPTION OF THE scope of the steel industry in St. Louis must, to be complete, include the surrounding area. The business long ago overflowed the confines of the city itself. Therefore, this is a summary of the industry in that area rather than in the city itself.

When steel made its appearance in competition with iron, it found in St. Louis a few small but well established iron manufacturing plants representing a total investment of only a few hundred thousand dollars and employing only a few hundred workmen.

A recent survey made to secure data for this article reveals that there are now operating in the St. Louis Trade Area, 116 concerns engaged in the manufacture of commodities made from flat rolled steel

and that the total capital investment in them is \$66,796,366. These 116 concerns have a capacity to consume approximately 700,000 net tons of rolled steel annually. In 1937 their sales grossed \$141,696,780. They furnish employment for over 26,000 persons and have an annual payroll in excess of \$28,000,000.

Many pages would be required merely to list a complete inventory of all the different kinds of articles manufactured by these firms and such a list would include almost any article made of flat rolled steel anywhere in the world today, from the smallest toy to the new streamline railroad coaches. On such a list would be found both passenger and freight railroad cars, bridges, buses, street cars, truck bodies, boats, barges, structural shapes for buildings, portable buildings, stoves, boilers, tanks, barrels, furniture, all kinds of electrical appliances, thermometers, tools and many other lines of hardware, a complete line of household utensils, signs, jails, coffins, culverts, a variety of ornamental work and metal containers of every description.

A trip of inspection through the plant of the Granite City Steel Co. is featured as one of the highlights of the interesting and informative program at St. Louis next May.

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**SERVICE**  
George H. Brown,  
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**TRANSPORTATION**  
A. J. Owings,  
Union Electric Company of Missouri.

In addition to these 116 companies engaged in the manufacture of products from flat rolled steel, there is located at Granite City, Illinois, the Granite City Steel Company, a most completely equipped plant for the production of sheets and plates. This mill has an ingot capacity of approximately 400,000 tons annually and rolling units sufficient to reduce that output to any gauge required. Within the last two years, it has expended more than \$6,000,000 in the installation of both hot and cold strip mills of the very latest type.

#### Other Mills

There is also in the St. Louis Trade Territory a mill that rolls small rounds which it manufactures into screws and bolts; one that rolls small rounds used in concrete reinforcement; another that rolls small shapes and skelp bar which it manufactures into pipe. The other mills roll heavier shapes used in steel buildings and bridges. These mills employ an additional 6,000 men with a payroll approximating \$10,000,000 per year and represent an investment of well above \$30,000,000.

Although the territory has many natural advantages such as being in close proximity to abundant deposits of iron ore and fuel with which to smelt it, has an ample supply of labor to draw upon, is ideally located geographically in relation to shipping facilities, and is in the midst of a great potential market, all of which should have made it one of the greatest steel producing centers in the United States—until recently it suffered from one great handicap: the "Pittsburgh Plus" price plan.

The "Pittsburgh Plus" plan was an agreement between steel producers that the price of all steel products rolled in mills outside of Pittsburgh, should have the cost of the freight from that city to final destination added. This rule gave Pittsburgh producers a decided advantage over companies located west of that city as it attracted fabricators to that locality and was the primary reason for the great concentration of the steel industry

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around it. Freight is a considerable item of cost and fabricators naturally sought to locate as close to the supply of semi-finished material as possible.

#### Granite City Basing Point

Finally, a few years ago, the industry in the Chicago area broke away from the "Pittsburgh Plus" agreement and quoted a "Chicago basing point" instead. This stimulated the fabricating industry in the St. Louis Trade Area somewhat, but it was not until the Granite City Steel Company this year announced a "Granite City Basing" price rate, that the shackles were entirely stricken from the St. Louis area, giving it an opportunity to reap the full benefit of its many natural advantages.

Already, since Granite City was announced as a base for price fixing,

there is a noticeable expansion of the industry already on the ground and at least two very large concerns have erected fabricating plants here. Still others are planning to locate here and the future of the rolled steel industry in the area is much brighter than ever before.

Local producers of rolled steel have the capacity to supply fabricators greatly in excess of those now located in the area.

While the "Pittsburgh Plus" price agreement undoubtedly greatly retarded the expansion of rolling and fabricating steel in St. Louis, the city was the first in the United States to enter into the manufacture of "Granite Ware" and "Tin Plate," both of which industries were started by W. F. and F. G.

*Continued on page 51*

# THE COAL MARKET

**T. W. HARRIS, JR.**

Chairman, N.A.P.A. Fuel Committee  
Division Purchasing Agent  
E. I. du Pont de Nemours & Co.  
Wilmington

THE FIXED MINIMUM prices on bituminous coal went into effect December 16th, 1937 for all coals produced east of the Mississippi River, and the other coal districts, west of the Mississippi River, have had established fixed minimum prices set up in January, 1938.

Throughout the country the Commission held hearings of intrastate versus interstate shipment of coal to determine whether the Four A clause in the Bill affected intra movement of coal and thereby brought it under the Bill. This clause reads that any intra movement of coal going into consuming areas where interstate coal is also consumed, the intra coal comes under the Bill. Since these hearings, a very large number of states have been declared by the Commission as having their entire production of coal, whether shipped intrastate or interstate, subjected to the control of the Bituminous Coal Act of 1937, with the added clause that if in any individual case, the *producer* desires to present a contract which he has and whereby the coal is moved intrastate, and also where he does not feel that the movement or selling of this coal affects interstate coal, he may present his case to the Commission asking for exemption.

The operators worked all summer in drawing up prices through their district Boards, and finally the Commission took over the work about the first of October, 1937 and issued the prices December 1, 1937. It would appear that they have added 20¢ a ton to the operators' prices on slacks and deducted 20¢ a ton on prepared sizes. In the coordination of prices in the 153 marketing areas in the United States from the 23 producing districts, it has developed that these fixed minimum prices on coal are in great variance

Address at the Midwinter Conference, Public Utility Group, N.A.P.A., Chicago, February, 1938.

from the same mines and going into different market areas. As for instance, marketing area #2 has considerably higher prices f.o.b. mines in producing districts No. 1, 2 and 3 than market area #1 from the same mines. The Associated Industries of the State of New York and New York City are strongly protesting these variances in prices.

So far court action has been very much limited although both operators and consumers have threatened same from time to time and in the case of the operators, the Commission has allowed temporary relief in the reduction of price of slack from five to ten cents a ton. Also the ruling which the Commission made with reference to crushed run of mine coal being priced five cents higher than run of mine, has been temporarily rescinded.

Some consumers have protested the prices, particularly the by-product consumers, and they are being granted hearings through the Consumers Counsel, before the Commission. For the consumer to reach the Commission, he must present his case through the Consumers Counsel or through an operator.

The Commission has listed certain marketing rules which are considered part of the Act as follows:

**CONTRACTS** made prior to June 16, 1933, are valid; those made after June 16, 1933, unless price is as high as fixed prices, or provide for fixed prices, are invalid. No contract can be made at present for over thirty (30) days.

**QUOTATIONS** must be made or confirmed in writing and become void if price of said coal is revised by Coal Commission order.

**PURCHASES**—At present no sales may be made covering longer than a thirty (30) day period from date of entering or acknowledgment by pro-

ducer, and must be acknowledged or accepted in writing within three (3) business days from date of receipt and be subject to certain conditions; unfilled balance at end of thirty (30) day period is automatically cancelled. Coal must not be diverted by purchaser without producer's consent.

**PRICES & TERMS**—On thirty (30) day orders, no coal may be sold at less than fixed price. If during the thirty (30) day period, price is changed, the new price applies from effective date of Commission's order. Excepting on sales of cargo, bunker or railroad fuel, invoices are due on or before the 20th of the month following shipment, and payment shall be made in full on a net cash basis. Prepaid freight, where permitted, shall be invoiced for immediate payment.

**CREDITS**—No credit to be allowed, other than for coal lost in transit, except where inferior coal has been shipped. Adjustments must be made before due date, and a formal claim presented by buyer and verified by an affidavit.

**ANALYSES**—Only analyses on file with District Board and Statistical Bureau may legally be quoted by producer, sales agent or wholesaler.

**SUBSTITUTIONS**—Under certain conditions it is permissible for the producer to ship other than size specified on order, but this privilege is not to be an expressed or implied condition of any order.

**MODIFIED RUN-OF-MINE**—The orders of the Commission permit only a slight reduction in the  $\frac{3}{4}$ " Slack, resulting in a decided decrease in the quantity of coal above  $\frac{3}{4}$ " in any car of Modified Run-of-Mine.

Also the Commission has ruled that operators cannot agree to an arrangement with consumers whereby their former contract prices, before December 16, 1937, would be protected in the form of a rebate in case the law becomes invalid.

Bonus and penalty contracts are being discussed, and may be allowed when contracting is allowed.

Based on the number of petitions presented to the Commission by operators asking for relief from prices which they claim are not properly coordinated in certain marketing areas, it would appear that

the stabilization of fixed minimum prices under this Act will drag out over many months and in the interim the consumer is subjected to varying prices on his coal which means constant watchfulness and opportunities to make savings by the purchasing agent. This information is obtainable through pamphlets issued by the Department of Interior, Washington, D. C., and they are continually bringing out revised supplements of the price schedules.

The present coal situation from an operators' standpoint is very unsatisfactory in that with the very large stocks of coal on hand as of December 16, 1937, when fixed minimum prices went into effect, consumers started immediately to reduce stocks in order to capitalize at once on the savings which they had in their stock pile. This largely affected the demand for slack and in view of the fact that this came in the middle of winter, when the

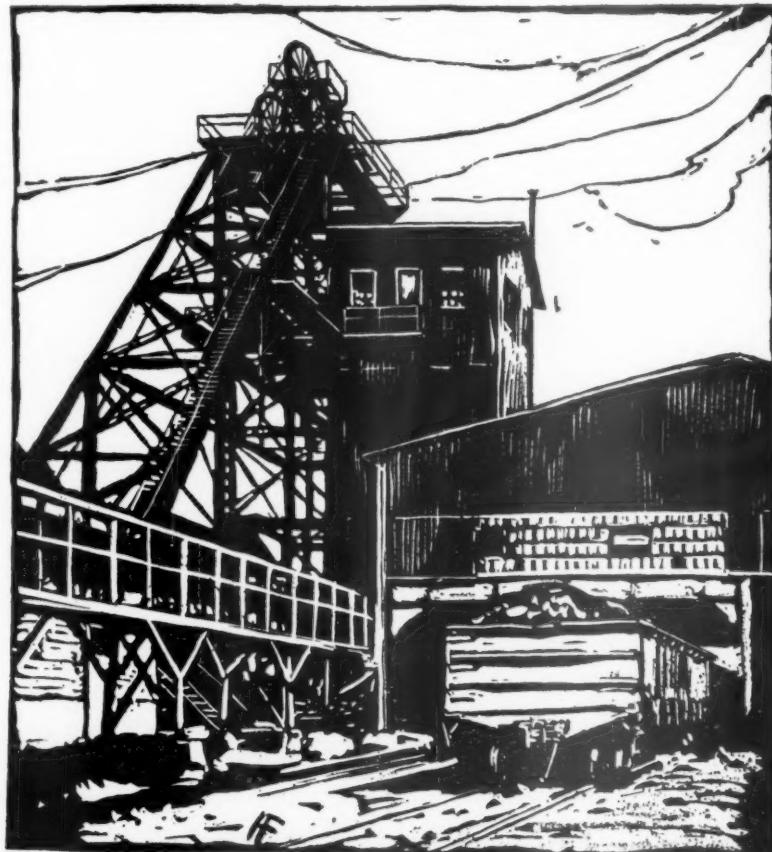
demand for prepared sizes is greatest, the side tracks at the mines are clogged up with slack, which in many cases has shut down mine operations. As a result of this, the operators have not been able to produce prepared sizes and reap the high prices which come from same and from which the profits of the mining industry depend. We have heard of cases where the mines are dumping slack where it is non-recoverable in order to sell prepared sizes at the present high prices. In fact, prepared sizes are selling today in many cases at a higher price than the minimum prices under the Bill.

If it were possible for the Commission to issue a temporary order for the next thirty to sixty days, reducing the price of slack sufficiently to make it attractive enough to the buyer to hold his present stock over this period, and thereby increase slack purchases, it would appear that this would be very

beneficial to the mining industry. Then the consumer of slack would use up his stocks in April and May of this year, when slack will be scarce on account of low demand for prepared sizes. It should be borne in mind that when this period arrived, if slack is not available, it will be necessary for the consumer to buy crushed run-of-mine coal at run-of-mine prices plus possible five cents extra, if the Commission reinstate this order. *Therefore, it is inadvisable to reduce stocks of slack too low from an over all economic standpoint.*

It is our estimate that in 1936, out of a total consumption of 428,000,000 tons, approximately 101,000,000 tons were consumed from captive mines, that is mines owned by industry other than the coal industry. This production was controlled about fifty percent by the steel industry which includes by-product coke ovens, steel and rolling mills, and slightly over twenty-five percent by the railroads, with the remainder being controlled by electric power utilities, coal gas retorts and a general classification of "other industries."

The increase of captive mines depends largely on the continuance of the present Bill, the level at which slack prices are maintained as compared with run-of-mine and screen sizes, and in some special cases on the obtaining of low cost operating mines delivering on short hauls to industrial consumers. As the minimum prices necessarily were set up to cover an average cost in the various districts, certain mines will be able to produce and deliver coal at a much lower cost than the average. On the other hand, industrial consumers who consume enough coal to justify the operation of their own mine, in a large percentage of cases use slack, and the difference between the minimum fixed slack prices and the cost of producing run-of-mine coal may not justify the purchase of a captive mine. Captive mines are required by the Commission to charge fixed minimum prices in cases where mines are operated under a separate company and, therefore, the savings



*Editor's note: Since Mr. Harris' address, the minimum prices and marketing rules referred to have been withdrawn by official order. The basic flaws which made that action inevitable are clear from his analysis.*



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In order to analyze fixed minimum prices, it is necessary to estimate the amount of coal consumed by various classes of consumers and whether this coal is run-of-mine, sized coal, or slack. After deducting from the 428,000,000 tons consumed in 1936, the 101,000,000 tons produced by captive mines, we have remaining 327,000,000 tons directly affected by the present fixed minimum prices. Of this amount, we estimate the percentage of consumption was divided as follows:

Colliery Fuels	1.1%
Electric Power Utilities	11.3%
Bunkers—Foreign Trade	0.5%
Bunkers—Domestic	0.8%
Exports—Canada & Mexico	3.0%
Exports—To other countries	0.2%
Locomotive Fuel	16.1%
Coke—Beehive Ovens	0.9%
Coke—By-Product Ovens	5.5%
Retail—Domestic	27.9%
Steel & Rolling Mills	2.3%
Coal Gas Retorts	0.3%
Cement Mills	1.5%
Other Industries	28.6%
Total	100.0%

We also estimate that of this coal produced from other than captive mines, 28% was run-of-mine, 34% sized coal and 38% slack, or in other words, of the coal screened and not shipped as run-of-mine, 47.2% was prepared sizes and 52.8% slack.

The Fuel Committee of the N.A.P.A. developed a questionnaire which was sent to its members in order to ascertain how much they were affected by the change in prices under the Act. Four hundred and forty-six replies were received. 75% of these returns covered slack, 17% covered run-of-mine and 8% screened or prepared sizes. The average return in tons of slack amounted to 21,000 tons per year, of run-of-mine 20,000 tons per year and prepared sizes 7,500 tons per year, based on the contemplated consumption in 1938. The average increase in cost between prices paid in 1936 and fixed minimum prices now in effect (revised for many changes since the minimum prices went into effect December 16, 1937) was 53¢ a ton. In the case of run-of-mine 45¢ a ton and prepared sizes 44¢ a ton.

It has been estimated that in 1936 the coal industry, east of the Mississippi River, lost 11¢ a ton on an average and that increase in cost of mining during 1937 amounted to 23¢ a ton which included the increase in Social Security, the increase in wage agreement made April 1, 1937 and the 1¢ a ton tax under the Act. Thus the average prices in 1936 would have to be increased 34¢ a ton in order that the coal industry east of the Mississippi River could break even on cost.

As slack is shown as advancing 53¢ a ton as a result of the N.A.P.A. questionnaire, this means that the slack prices are carrying 19¢ a ton more burden than the increase in cost. It just so happens that this 19¢ a ton over burden checks very closely with the estimate that the Commission increased slack prices 20¢ a ton over and above the prices as set up by the District Board.

We wish to call particular attention to the fact that we estimate the amount of slack and the amount of prepared sizes produced are of approximately equal quantities. Of the prepared sizes produced, 80% is marketed through retail yards for domestic consumption and is reported as being sold at prices higher than the fixed minimum prices, so that it would appear that the coal industry is not only collecting the estimated 20¢ a ton increase on slack prices referred to above, but also, the domestic consumer is not receiving the benefit of the 20¢ a ton reduction.

Under price control, there will be just as much opportunity for the engineer and the purchasing agent to make savings in his case of fuel consumption, not only due to proper selection but by the improvement of both coal producing and coal consuming equipment.

This is particularly true in view of the fact that the fixed minimum prices appear to be set up for difference in quality, based on the difference in B.T.U. and ash and, as you all know, many other factors enter into the value of coals to the consumer besides these two, such as fusing point, sulphur, grindability.



# Reading the Business Barometers

## 14: Steel Prices

**HAROLD A. KNIGHT**

PROBABLY THE MOST important set of commodity prices to the capital goods industries are those pertaining to steel. Automobile makers, railroads, builders, ship-builders, machinery makers and hosts of others scrutinize steel prices among the first items when they are considering costs of their products. Apparently the Administration thinks of steel prices frequently when they have in mind the "extortion" practised on the public by the "economic royalists," represented largely by the "Sixty Families."

About six weeks before this was written the President stated that steel prices should come down. Then he reversed his stand, stating only recently that steel prices are not too high. At least this commodity has been much in the public eye of late because of this attention from Washington.

Yet like some other commodities discussed in these articles, particularly canned food, steel prices have not been very barometric of current trends during recent years. Thus during the past five months when prices of non-ferrous metals declined 32%, steel prices remained unchanged. Thus one who depended solely on the fluctuations in

steel prices to give him a general trend of business would decide conditions of business virtually stable, provided he had closed his eyes to all else that was going on about him.

Steel is not traded on an exchange like wheat, cotton, rubber, copper and scores of other commodities, and hence there is no daily indicator of trends. Yet the business man and purchasing agent who would be well posted on business barometers generally must know some fundamentals concerning a barometer which, at least for the present, has stuck in the glass and become jammed. Some day some one will give the instrument a vigorous shake and it will once more be fluctuating up and down and revealing current business trends generally.

The many artificial phases of the New Deal have made the behavior

of steel prices artificial for the time being. Thus the composite price of steel just now is 2.605 cents per pound, according to the *Iron Age*, the highest in at least ten years. Copper, another commodity which is frequently mentioned in the same breath with steel, is 10 cents—against a depression low of 5 cents and a postwar high of 24 cents.

The steel code was one of the first to be framed under the NRA. Here the steel industry put on paper and made into hard and fast rules the marketing ideals fostered by the master minds of the industry for many years. Though the steel code is no longer in effect, the spirit of the code still exists and that steel maker who cuts prices secretly is regarded as a traitor and a public enemy No. 1.

Moreover the Wagner Labor Act and the general hobnobbing between Labor leaders and the White House made steel wages an inflexible standard (until the recent pact with the Steel Corporation admitted the possibility of readjustment). Hence it has seemed the natural thing for steel prices also to become inflexible. True in the lead industry, prices are only half

*Continued on page 45*

**Next Month:**  
**Grains**

# “Let’s Take Another Look”

THE PAST YEAR has been one of contrasts. At this time last year the outlook for the electric industry was exceedingly bright. The industry was developing new markets and the demands for energy were increasing on every side. It was clear even in the early days of 1937, that a new record in energy production was in the offing. It was even predicted that this increase in the use of electric energy was just the beginning, and that the industry must prepare for unprecedented demands. Some of the more optimistic leaders in the industry were even predicting that serious shortages would develop in the near future.

Today this optimism no longer prevails. If production in 1938 proves to be equal to that of 1937 many of our leaders will be more than satisfied. Let us try to determine how the problems of the purchasing agent have been affected by these changes, and what his present position is.

As a basis for our study, and in order to see the problem in its proper perspective, I should like to point out very briefly your position a year ago. My analysis of last year led me to the conclusion that while the immediate outlook of the electric industry was very bright, purchasing agents were facing a very critical problem. You were being forced to purchase materials and equipment, in such a way and under such conditions, that the ultimate effect upon the entire industry would be unfavorable. This would be true, because if present trends continued, a cost-price squeeze would be inevitable.

In order to see the significance of this cost-price squeeze, let us look at the situation as it appeared a year

ago. At that time demand for energy was increasing and prices were being lowered. From the side of demand it was discovered that marginal and also average prices were decreasing. This meant that consumers were receiving unprecedented prices. In order to satisfy these demands, however, more capacity was needed. Here is where the problems of the industry became your problem. How was it going to be possible to satisfy these new demands at ever lower prices, when prices of materials and equipment were increasing? But this was not all; operating expenses per unit of output were also increasing.

It is perfectly possible to offset increasing fixed costs by increasing the load factor, or introducing other efficiencies. This may not be true of operating costs however; hence, if costs are to be lowered, not only must fixed costs be offset by better load factors, but the latter must so decrease costs that the increased operating expenses will also be offset. This is a big task and it stands to reason that the time will come when it will be impossible longer to prevent a cost-price squeeze.

If conditions had continued as they began in the beginning of 1937 the cost-price squeeze would have been inevitable. This condition placed purchasing men in a very unfavorable position, for it was their task to prevent this condition. Apparently, the industry did not realize the significance of these trends, nor the uncompromising position.

But it was not strange that the industry tended to discount your problems. The industry is com-

posed of many groups with many problems. Viewed in the light of many other factors, it was but natural to minimize the problems of any one group. The sales group, for instance, finding that markets were more susceptible to the use of electric energy were naturally enthusiastic. Management, as it viewed these unprecedented demands, was concerned with problems of supplying these markets. Besides, the general theory had always prevailed in the industry that larger markets brought lower costs. Hence the tendency was to discount, or at least minimize, the possibilities of this cost-price squeeze.

What you saw in the early months of 1937 did not impress the industry until the end of the year when the recession was already under way. It was then that the industry began to see the implications of these squeeze tactics.

Suppose, however, that conditions had continued throughout 1937 as they were at the beginning of that year, and suppose the recession had not set in when it did; what would this have meant to purchasing agents? During the past year management has been talking about billion dollar expenditures. We have been told that since 1932 the industry has accumulated deficits in construction of over \$2,500,000,000. It has been inferred by some of the more enthusiastic members of your industry that these deficits should be made up in a few years. Suppose these predictions or hopes had been carried out. Suppose you had been asked to make these purchases. Suppose price trends which were apparent early in 1937 had continued. What would you have done,

Address at the Midwinter Conference of the Public Utility Group, N.A.P.A., Chicago, February, 1938.

and how would your purchases have affected the cost-price relationships in the industry?

Perhaps no better analysis of what was going on during these months has been made than that which was presented in just a few words by President Kellogg of the Edison Electric Institute in his summary of 1937. Writing in the *Electrical World* on January 15, 1938 he stated:

"The notable reductions of the last ten years have been predicated on the theory that, five-eighths of the total costs being relatively fixed, they form a constantly smaller amount per unit of output as the latter is increased. This all supposes relative stability in other unit costs, but the sharply rising tendency in these other costs in recent years makes further rate reductions a threat to the financial stability of the industry."

It is apparent from this statement that the industry for the first time in its history was being subjected to such an experience. It was discovered that increased sales of electricity may not, under all conditions, result in lower unit costs. It was made aware, for the first time, that possible economies in overhead costs, better load factors, and the like, may be more than offset by increasing operating expenses.

This means, when viewed in the light of the purchasing problem, that even if you had been able to accomplish every economy which the industry had expected of you, other costs would have risen so much that your efforts would have been largely nullified.

Fortunately, you were not asked to face these difficulties. With the coming of the recession your position has been changed with almost dramatic suddenness. The recession has been rapid; its devastating effects are greater than we thought possible. It has affected us more than we have cared to admit. We had been lulled into the idea that stability was being achieved; hence we were not conditioned to take another depression with the same

cheerfulness with which we took the last. This sudden change has made the problems of your industry much more crucial and significant than your own.

Let us look at some of the short-run favorable factors which now confront you. The recession has not made it necessary for you to worry much about increasing costs. You may already have experienced that pleasant feeling of being in a buyers' market, and it is becoming more apparent all of the time that this market will persist for some time to come.

In the March, 1937, issue of PURCHASING, Prof. Umbreit analyzed the problems facing purchasing executives for electric utilities. In the light of an eventful year's developments, that analysis is revised and brought up to date.

During the past year you were required to purchase about a half billion dollars worth of equipment for new construction purposes. In 1938 your program will be about the same. This means that pressures will be reduced all around, for you are geared to do this amount of business. On the other hand, it is not likely that you will be faced with a sudden falling-off in the amount of purchases which you will make, similar to that which you were forced to face in 1931. You will recall that after purchasing \$960,000,000 worth of equipment for new construction in 1930 you were suddenly forced to reduce your expenditures to about one-half that amount in 1931 and then to continue this reduction until by 1933 you were hardly over the \$100,000,000 mark. This caused pressures which were extremely disagreeable. At present it does not seem that you will be forced to resort to pressures either upward or downward.

Another favorable factor relates to the type of purchases you will make in the future. The industry has now reached a point where the relationship between distribution

and generation will tend to favor generation. This relationship is very significant from the point of view of costs. The number of dollars invested per kilowatt of capacity will increase as more money is spent for distribution than for generation. Since capacity determines the amount of ultimate output, as distribution expenditures increase in relation to generation, overhead costs increase. Last year I pointed to the fact, that while on the average the cost per kilowatt of capacity for generating equipment alone was only \$95, the all-over investment in property and plant was about four times this amount and that it had been increasing for a number of years. This was due to the fact that expenditures for transmission and distribution were between three and six times the amount spent for generating equipment. There was hardly a year since 1920 when the expenditures for generating equipment were more than 20% of the total capital expenditures for new construction. This was necessary, of course. The point I wish to make is this: as long as this ratio persists, the cost per unit of capacity increases and that increases overhead. Apparently this condition is changing, for in 1937 the ratio had risen to 25% while the estimates for 1938 will be about 33%. As this ratio increases, fixed costs decrease per unit of capacity.

Another very favorable factor is the result of the change in the attitude on the part of our political leaders in respect to price relationships in general. It was presumed after 1933 that the way to prosperity was through the medium of higher prices. But when it came to the electric industry, these same political leaders presumed that while all other prices were increasing, the electric industry should serve at ever lower prices.

During the past year a change of attitude in respect to this price relationship has taken place. It is now evident that the Administration is convinced that purchasing power can be secured better by having lower prices than by the opposite

situation. From the point of view of the electric industry this is a favorable omen.

In your own particular work this will mean, if the policy is carried out, that equipment, materials, and labor will sell for lower prices. As purchasers of these commodities you cannot help but be aided by such a reversal of policy, unless of course punitive measures are adopted to carry out such policies which may ruin instead of aiding business.

There are still other favorable aspects in the offing. Leaders in the industry are talking about making a more careful selection of customers. This can mean only that markets will be developed in which loads will pay out in the long run. We have reached a stage in industry where this is necessary. We often talk so glibly about increasing loads, or raising standards of living, without realizing that these purposes are often accomplished only because we discriminate against one group of customers to subsidize another. This discriminating will always do more harm than good in the long run. Hence, if management is going to study the nature of customer loads in the light of all the factors, this will be a great aid in eliminating loads which do not really pay, and this in turn will prevent overcapacity within the industry.

A second aspect of this same problem should be considered. The time has come for the industry to survey carefully the nature of the competition which will be allowed. In some respects this problem has never been carefully thought out. Much is made of the fact that the government by yardstick methods competes unfairly with the electric industry and yet little is made of the fact that the industry itself has often used its monopoly position in the field to compete with other industries. There is still a field for gas, coal, and oil. The electric industry must consider carefully to what extent the consumer is actually better off by consuming one or the other of these products.

For instance, it is one thing to point out to the housewife that certain electrical appliances will bring

many comforts and conveniences which may not be attained when other appliances are used; it is another to realize that where purchasing power is very limited, first things must come first. It may be better in the long run for all industries concerned, if those consumers who cannot afford the best be allowed to use the cheaper though less convenient product. It does not make good sense to go without many of the essentials of life in order to bask in the luxury of others. All this talk of raising standards of living must be very carefully considered; a bar of soap may be more important than an electric light in this respect.

As both government and the industry see this problem in its proper perspective, both will make a more careful survey of the market; thus all concerned will benefit.

But while your outlook in respect to this problem is brighter, the present outlook of the industry as a whole is not so favorable. The larger problems which now confront the industry will probably have some effect upon your future actions; hence, we should look at these for a moment.

The outstanding problem which the industry faces today is the attitude of the government in respect to it. There appear to be several difficult problems which will prevent the industry from progressing with confidence. These must be solved, or at least mitigated, before the outlook for the industry will again be favorable. Perhaps the outstanding problem at present is the question of how to secure adequate capital to expand, at a price that will allow the industry to carry on such expansion in an economical manner. This problem, however, is predicated on the solution of several other problems and will be solved as they are solved.

The electric industry has faced government competition for several years, but at present this competition appears to affect it more than ever before. No one can predict what the result will be, but it stands to reason that as government builds electric plants and sells electric

energy, the markets for private companies will tend to be limited. Then, too, the question of the abolition of holding companies is again to the fore and the problems of reorganization must be faced. This will retard the industry to some extent and will increase the fear of present and potential investors.

Taxes are also mounting. At present 22.8% of net income and 14.7% of the total operating revenue must be allocated to taxes. If taxes mount, and it is inevitable that they must, they alone will determine the lower level at which electricity can be sold.

There is another problem which will affect the industry in the future but which must be considered at present. The electric industry as well as the nation is coming of age. Expansion cannot be continued at ever-increasing ratios. While standards of living can still be raised and while we are not yet at the end of the expansion period, certain problems are in the offing. If the industry sees these problems in time, if it prepares carefully for the future, if it insists that a long-run point of view be taken, it may avoid the fate which has befallen many other public utilities.

Fortunately for the industry, it finds itself in a position today where it does not possess excess capacity. It is also evident that it is in a position where it can adjust itself to many of the new conditions which may come. If new demands arise it has the ability to expand; if progress in the arts reduces demand, it can contract gracefully.

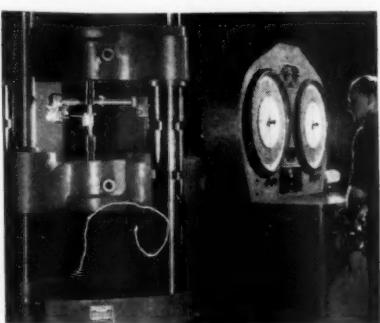
There is still another aspect. The industry is becoming more cycle-conscious. As the proportion of the energy that is sold to industrial users and for the so-called luxury demands in the home increases, the industry is bound to become more susceptible to changes in economic conditions. The sudden falling-off in the consumption of energy during the last few months tends to substantiate this fact. To what extent such cyclical factors will affect the industry cannot be anticipated as yet, but this tendency must be taken into consideration.

IT'S WHAT'S INSIDE  
THAT COUNTS!



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3000 magnifications . . . flash . . . and a picture of a microscopic examination of a metal is made and filed away for future reference on its behavior. Again a precision instrument of highest quality helps to make certain that what's inside a Crane valve is exactly what should be there for greatest service.



MEASURING METAL STRENGTH

Test sections from raw materials for Crane valves tell their tale of tensile strength and elasticity in this ponderous testing machine. Sections are tested to the breaking point, which must be way over specification requirements. What's going inside proves its value here.

PROVING THEIR CONTROL OVER FLOW

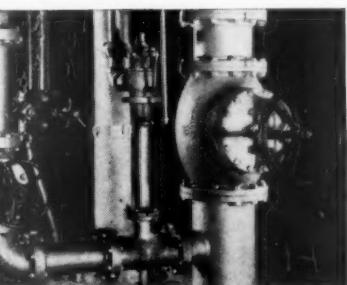
(RIGHT) All dressed up and ready for the stock room, except that they have to withstand the seeking, searching fingers of water, air or steam under pressures far higher than service ratings. Such are the tests that Crane valves must pass before being certified for service.

—and that goes for

# CRANE VALVES for Industrial Service

The wrapper may make a cigar look nice. But it takes a high quality, long filler to make it a good smoke. Valves are like good cigars . . . it's what's inside that counts in performance. The more-than-ordinary performance of Crane valves in common use is due to unparalleled experience in designing, uncom-

mon quality of raw materials, unusual care in manufacture, unvarying high standards maintained by the most complete and exacting system of checks and tests of products used in the industry. Install Crane valves and enjoy uncommon valve performance even in valves of common use.



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For three generations of actual service, Crane valves have been proving that they are good all the way through in millions of locations. Only Crane has so vast an accumulated experience in producing valves of known quality, of predictable performance in service.

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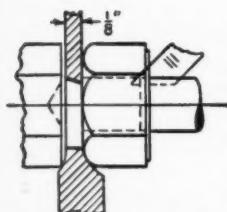


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# JUMPED 24%

## WHEN UNION SUPERCUT WAS USED

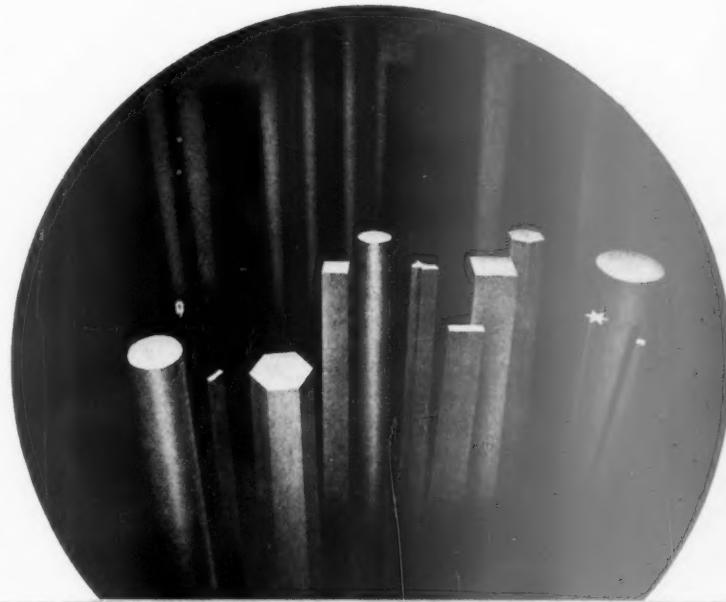


Like yourself, they wanted to cut production costs. They couldn't increase speeds.

The  $\frac{5}{8}$ " single spindle automatics were being run at top speed in milling these nuts from  $\frac{3}{4}$ " hexagon ordinary S. A. E. 1112 steel bars.

On recommendation of a Union Drawn field service man they changed to Union Supercut High Sulphur Bessemer Screw Steel. Due to 30% longer tool life and less "down-time," production efficiency jumped from 75% to 93% and has been maintained constantly at that higher figure. Increased feeds resulted in a further gain of approximately 25% in hourly output. And the product showed a much better finish.

If you are seeking means for lowering production costs without the necessity of buying new equipment, investigate the possibilities of Union Supercut. Ask us to send a Union Drawn field man to work with you. Union Drawn Steel Division of Republic Steel Corporation, Massillon, O.



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**UNION HYMO** • **UNION PRECISION SHAFTING**  
**UNION SPECIAL FINISH**

# THE MARKET PLACE



## Supply

### BURLAP

THERE WAS LITTLE CHANGE in the burlap situation during February. A meeting scheduled for this month at Calcutta to arrive at a production agreement failed to materialize and is now scheduled for the middle of March.

### COAL

OUTPUT OF BITUMINOUS COAL fell off considerably during February, declining from a rate of around  $7\frac{1}{2}$  million tons weekly to  $6\frac{1}{2}$  million tons. The high stocks of industrial consumers were being rapidly reduced in the absence of replenishment buying. Stocks at mines were poorly balanced, with excessive slack and a shortage of domestic sizes due to production difficulties. Output of anthracite and coke was also at lower levels.

### COPPER

DOMESTIC PRODUCTION OF COPPER increased surprisingly in January, reaching 70,487 tons, nearly three times the month's sales, and raising some question on recent reports of widespread curtailments. Refined stocks went up to 299,133 tons, the highest figure in three years.

### COTTON

TOTAL SUPPLIES OF COTTON in all hands at the 1st of February amounted to 15,700,000 bales, pointing to a probable carryover of more than 10 million bales at the end of the cotton year. The CCC now holds 6,600,000 bales, which may be impounded until 1939. Indicated acreage for the new planting amounts to 28,198,000 acres, about 18% below that of the past year. This figure is of course highly tentative, as planting preparations are scarcely under way, and are in fact rather more backward than usual.

*A quick review of the market noting major developments in supply, demand and prices of selected basic commodities*

## Demand



TRADING WAS LIGHT and confined to minor quantities for immediate requirements.

THERE WAS LITTLE INDUSTRIAL buying under the minimum price regulations and the attendant market uncertainties prompted by the many changes and the temporary injunctions and stays issued against the schedule.

WORLD MARKETS WERE FAIRLY active in February, domestic sales relatively small. The month's total sales reached 23,519 tons as compared with 25,543 tons in January. There was, however, a good volume of inquiry, apparently testing the market, and some consumers who have long been on the sidelines showed more interest.

## Market

BURLAP QUOTATIONS HELD reasonably firm in view of the restricted demand. At the end of the month, the schedule ranged from no change to 10 points off.

OUTSTANDING PRICE FEATURE of the month was the suspension of minimum prices, ordered by the Bituminous Coal Commission and effective on February 26th. The outcome of this move, pending the re-establishment of minimums after public hearing, is highly debatable. At best, this may mean a return to former contract prices; at worst, a drastic break. Some operators appear receptive to any immediate market that promises to relieve congestion at the mines.

COPPER PRICES WERE STEADY at 10 cents throughout February as producers and custom smelters held to the same quotation. The chief strength of the market was derived from a strong and active European market, and domestic consumers were inclined to look for a price weakness which failed to develop.

DOMESTIC CONSUMPTION in January was 434,740 bales. Mills have held operating rates to the lowest level in years, but increased the pace during the second half month after a heavy cloth buying movement produced orders for about double the current production, and demand continued at a good level over the balance of the month. Wholesale and retail inventories of staple constructions are excessively low, and the combination of supply and requirements shows textiles to be in a buying zone. Trading in cotton futures was active.

SPOT COTTON PRICES advanced steadily from 8.51 at the beginning of the month to 9.37 on the 23rd, practically 25% above the low point of last November. A slight recession in the closing days brought the price back to 9.16, but the gain for the month was a substantial one. Aside from a general improvement within the industry, contributing factors included the new farm legislation, and fear of inflationary measures. Cloth prices also firmed throughout the month and seem headed for more profitable levels.



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Gaylord Leadership**

**GAYLORD CONTAINER CORPORATION**

General Offices: SAINT LOUIS

MARCH 1938

PAGE 35

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## **Guides Driver**

## **Guards Work**



*Faster work with half the pressure*

One-hand starting and driving — other hand free to hold work. Three times the purchase of a slotted screw. Faster driving method cuts time to a fraction.



*As easy as pointing your finger*

The driver's point fits the screw's recessed head. Awkward places easy to reach—the screw won't drop off. Self-centering—straight or at an angle —no screws driven crooked.



*Better work—and no spoilage*

The driver can't slip out and scar costly material or the fingers. No broken heads—no burrs to remove. Better holding power—the screw sets up much tighter.

Given the acid test by certain key firms in the screw-using industries . . . plants where production costs are watched with an eagle eye — where quality is right and there's no excuse for waste —

The Phillips Screw with the *patented recessed head* has been okayed, after all sorts of time, motion and quality studies, by executives, engineers, purchasing managers, workers.

Now the production facilities of the screw manufacturers have been enlarged — and we're in a position to meet the demands of any plant that has use for screws.

Take the job the picture shows. There the Phillips Screw saves time — and screws — and strength — and spoilage — and money.

Faster work. Use power drivers or higher speeds where power is already used. No need to steady the screw, it

steadies itself. No burrs to remove afterwards.

Greater holding power — assemblies are more solid, and often fewer or smaller-diameter screws will do as well. No broken heads — no screws dropped. Greater driver and bit life — fewer sizes needed.

Easier work. The screw helps out. No push and turn — just turn. Maximum contact — minimum muscles. Men are fresher toward the end of day.

Better looks. The driver can't leap from a Phillips Screw to dig a channel across the work. No gnarled slots — no scarred fingers. And the screw is flush with the surface.

What's your fastening problem? Find out what the screw with the *patented recessed head* can do! Send the coupon to one of the firms listed below . . . mention the type of work you expect screws to do . . . they'll send you folder A, telling you how well the Phillips Screw with the *patented recessed head* has done that work for others.

**SEND THIS COUPON TO ONE OF THE FIRMS  
LISTED AT RIGHT—FOR SPECIFIC FACTS ON  
PHILLIPS SCREWS—NO OBLIGATION.**

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Company \_\_\_\_\_

Address \_\_\_\_\_ Product \_\_\_\_\_

### *This is the Patented Phillips Recessed Head*

Note the tapered slot — its angle was worked out after months of tests to learn how to utilize the driver's maximum turning power. Note the flat surfaces — no curves except at the rim. That prevents the driver from burring the screw. Machined to tolerances of plus or minus .001" — to guarantee a perfect fit. Hand, spiral, or power drivers may be used — available from leading manufacturers and distributors.

work

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material  
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sets up

solid, and  
well. No  
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and turn —  
Men are

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surfaces —  
the screw. M  
fit. Hand, sp  
manufacturers an



MACHINE SCREWS

SHEET METAL SCREWS

STOVE BOLTS

PHILLIPS



WOOD SCREWS

SCREWS

Gain Time... Guide Driver... Guard Work

Patent Nos. 2,046,343 2,046,837 2,046,839 2,046,840 2,082,085 2,084,078 2,084,079 2,090,838  
Other domestic and foreign patents allowed and pending.

American Screw Company, Licensor, Providence, R. I.

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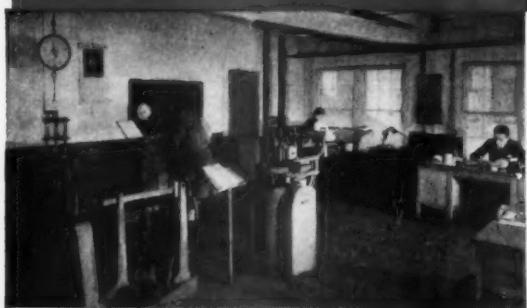
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PLUS**



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WOOD SCREWS

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MACHINE SCREWS

STOVE BOLTS

SHEET METAL SCREWS

PAGE 38

PURCHASING

# AMERICAN

with the patented

Patent Nos. 2,046,343, 2,046,837, 2,046,839, 2,046,840  
2,082,095 2,084,078, 2,084,079 2,090,838



# SCREWS

recessed head

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**GAIN TIME** One-hand starting and driving. Triple the purchase. Use faster driving method.

**GUIDE DRIVER** Driver's point fits screw's recess. Screws can't drop off. No screws driven crooked.

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# Company

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in both slotted head and Phillips recessed head.

MARCH 1938

American Screw Company  
Providence, R. I.

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Enclosed is \$1.00 for a sample kit of American PLUS Screws with Phillips driver.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Your distributor's name \_\_\_\_\_

PAGE 39

## Supply

### IRON and STEEL

STEEL OPERATIONS WENT slightly above 31% during February, but slipped back below 30% at the turn of the month. The average rate was better than reported for January, and a 50% average for the year is now predicted on the basis of reaching 65% in the last six months. Operations were exceedingly spotty. Inventories of semi-finished and finished steel, which were reported down at the beginning of the year, are now seen to be larger than anticipated, particularly among users. A survey of annual producing capacity shows an increase for 1937 in both steel ingots and the pig iron and ferro-alloy group—the first increases recorded since 1934 and 1933, respectively. Present figures are: for steel 71,065,540 tons (up 1,900,000), and for pig iron and ferro-alloys 50,698,400 tons (up 1,100,000).

### LUMBER

OUTPUT OF LUMBER DECLINED further during February, a curtailment of slightly more than 10% being effected in spite of an unusually favorable season for logging. As a result of two successive months of operations at levels below incoming orders, the statistical position of the industry has been materially improved. Currently the industry is operating at about 41% of the 1929 weekly average, and the ratio of unfilled orders to gross stocks of softwoods is the highest since early October.

### NAVAL STORES

STOCKS OF BOTH turpentine and rosin were reduced at Savannah and Jacksonville in a dull and featureless month. Receipts were exceedingly light.

### PAPER

MANUFACTURING OPERATIONS IN paper and paperboard during February held to the rates established in late January, and the month as a whole shows a substantially improved average. Stocks accumulated both by mills and consumers, particularly in book papers, still affect production schedules, and the usual April peak is likely to be deferred until midsummer.

## Demand

PURCHASING OF STEEL SHOWED a tendency to mark time last month, but improved somewhat on the price announcements at mid-month. Uncertainty as to the price structure has been a deterrent factor, which is not altogether improved by the flexibility of the new wage agreement. Automobile purchases were generally deferred, structural work is inactive, and tin plate—a leading consumer last year—is also at low levels. The most active major market has been shipbuilding, and the prospect of a sizeable armament program points to sustained interest from this quarter.



## Market

THERE WAS SOME readjustment of steel prices in February, the most notable being a reduction of \$4 per ton on cold-reduced and oiled sheets used largely in the automotive industry. Later, the bulk of the list was reaffirmed for the second quarter, including sheets at the lower level. Commodity cold-rolled strip was down \$2, wire and rod items unchanged. Price differentials for extras on some items were waived without altering the base price. The industry attaches considerable importance to the fact that government pressure for lower steel prices has been withdrawn, but some uncertainty still prevails. Jobbing prices were adjusted and reaffirmed in accordance with the mill schedule. Leading producers of pig iron also announced second quarter prices without change.

NEW ORDERS FELL OFF in the early part of the month, but recovered slightly in later weeks. Chief hope for any marked expansion lies in the federal housing program. Hardwoods continue in very dull demand.

DEMAND WAS LESS THAN routine in February, several days passing without any shipments being reported.

LUMBER PRICES WERE generally firmer than in January though few advances have actually been reported. The current schedule is approximately at the level of eighteen months ago. There is still considerable pressure being exerted for lower prices, but resistance is strong in the hope of an improved demand.

TURPENTINE PRICES SHOWED some firmness, but lost a little ground over the month as a whole. The rosin list, however, moved steadily downward in all grades, losses for the month ranging from 20 cents to \$1.20.

CONTRACT DELIVERIES OF newsprint continue in normal volume. On other grades, buying is chiefly on a hand-to-mouth basis, and any improvement in general business activity will be promptly reflected. Inquiry for kraft, tissues and writing paper is improving; fine papers were slow, and boxboard demand has fallen off slightly.

THE PRICE STRUCTURE IS well maintained in practically all classifications except board. News and chip board declined \$2.50 per ton; single lined manila chip is down \$5.00. New rags are at lower prices, as are the better grades of waste paper, reflecting dullness in the fine paper field. Pulp prices are unchanged.



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### Supply

## PETROLEUM

OUTPUT OF CRUDE OIL increased in February, reaching a daily average of 3,347,700 barrels in the third week, and ending the month at 3,322,818 barrels. Gasoline storage was up to 89,774,000 barrels, and gas and fuel oil stocks were also increasing. Proven petroleum reserves in this country are now reported as 15,507 million barrels, or 2,443 million higher than a year ago.

## RUBBER

DOMESTIC RUBBER STOCKS continued to mount despite a sharp decrease in imports since the first of the year, and with a 70% quota prevailing in place of the 90% figure of earlier months. January was the seventh successive month to show an increase in U. S. supply, the 269,078 tons on hand February 1st representing an advance of 31.7% over a year ago. The comparison is more striking when compared to current rates of consumption. A year ago stocks were scarcely a four months' supply, while today they represent slightly more than nine months' requirements.

## TIN

THE WORLD'S VISIBLE supply of tin declined 1,982 tons in January to 18,965, but carryover at Straits Settlements and in Holland offset this by an increase of 2,039 tons. Stocks of metal in Commodity Exchange warehouses increased considerably in February to a total of 3,032 tons. Export quotas were again cut sharply for the second quarter, a 15 point reduction bringing the allowable to 55% of standard tonnage, or about 11,849 tons per month.

## ZINC

SURPLUS STOCKS OF SLAB zinc mounted rapidly in January despite a 6% curtailment in production. Some increase had been expected, but with 23,756 tons added to the supply, total stocks were up to 88,532 tons, the largest supply since late in 1935. Production is being further reduced, but is still above sales and shipments. Smelters are reported as being overloaded with ore. Ore production is now virtually in balance with shipments, and stocks stand at 17,660 tons.

### Demand

THOUGH IN THE LONG VIEW consumption of petroleum products is generally broadening and holding to new high levels, demand was routine and somewhat disappointing in February. Relatively warm weather held down the demand for fuel oil, and consumption of gasoline is reported as lagging 10% below last year in some areas, thus accounting for the rapid rise in stocks.

### Market

NOMINALLY THE PETROLEUM markets were unchanged during the month. Actually, a very unsettled condition prevailed, altogether on the weak side. There was considerable shading of retail prices on both gasoline and fuel oil, and bulk prices for both products reflected this weakness. Rates on oil tankers in the coastwise trade have tumbled sharply and may affect the primary price structure.

CRUDE RUBBER CONSUMPTION in the U. S. during January amounted to 29,429 long tons, up 1% from December, but down 42% from January, 1937. February consumption reports are expected to show another total under 30,000 tons. Production and shipments of tires are substantially under the low rates of the fourth quarter of 1937.



TRADING WAS GENERALLY DULL during February, the lack of interest being broken by only two factors—a large purchasing program by the Navy Department, amounting to slightly more than 100 tons per week, and speculative activity following the quota slash. In the closing week, purchases averaged well under 150 tons per day.



DEMAND IN FEBRUARY WAS light and of a routine nature, improving somewhat in the closing week of the month. Unfilled orders, which were down to 45,400 tons on January 31 from a peak of 106,187 tons last August, contracted still further and are now under 40,000.

RUBBER QUOTATIONS AT the close of February were fractionally higher than the levels that prevailed at the opening of the month. The first half-month saw spot prices sag to 14 $\frac{1}{4}$ , but a sharp recovery carried quotations up to 15 cents in the third week. Successive declines in the closing days brought the market back to 14 $\frac{5}{8}$ . The premium on crepes widened to  $\frac{7}{8}$  of a cent, and the spread between current contracts and distant months also widened to 85 points, as compared with 68 points only a month ago and 62 points three months ago.

TIN PRICES FLUCTUATED narrowly during the first half of the month, between 40 $\frac{1}{2}$  and 41 cents. After the announcement of curtailed supplies for the second quarter, quotations climbed steadily to a high of 42 $\frac{7}{8}$  cents in the fourth week, then experienced a slight reaction and closed the month at 42 $\frac{1}{4}$ . However, only a negligible tonnage was traded at these higher levels.

THE ZINC PRICE WAS at 5 cents, East St. Louis, at the beginning of the month, but about a week later was cut to 4.75 and continued at that level with no appreciable stimulation of demand. The "average price" basis was observed on only a small portion of the transactions. Foreign prices were somewhat firmer, influenced by armament programs. The price of zinc ore also dropped \$2 a ton to a range of \$29.00-\$30.00.

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# Standardization of BOND PAPER COLORS

**I**N THE DECEMBER, 1937, issue of PURCHASING, there is a very interesting letter regarding color standards for paper, written by Mr. Leslie T. Robbins, Purchasing Agent of the University of Colorado. Having spent nearly forty years in the paper business, preceded by some years in the printing business, I was much interested in the very able manner in which Mr. Robbins presented the above subject.

Color to a paper man, especially a purchasing agent for a paper merchant, is a difficult item to handle. So much can be said on the subject that I believe it would be well to confine my remarks to colored bond paper, although the problem is just as acute in book papers, cover papers, bristols, cardboard, etc.

Many purchasing agents have to do with bond papers alone, and the problem that irks Mr. Robbins is even more pronounced in book papers and cover papers due to the vast tonnage involved. At the outset it would be well to know that color in bond paper, and in fact all papers, is applied in the beating engine or beater. Each paper has a "furnish," i.e.—a set formula covering the pulp, size, color, etc. To a given amount of all the other ingredients, a definite amount of dye stuff (usually aniline) is added, and after the "furnish" is beaten for a given period, it is refined through a Jordan (or refiner), and shortly thereafter is flowed over the wires of a Fourdrinier paper machine, and—there's your paper.

Everything is supposed to be under control, and it is assumed that on stock or mill lines where the colors or shades have been decided upon, that the output,—say, of blue bond—will always show the same shade as former runs of blue made up from the same "furnish." This does not always happen, and paper makers will tell you that even a

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slight difference in humidity or temperature will cause a variation in the appearance of the finished paper. Some of the factors causing possibility of variation in color are speed of machine, changes in atmosphere, variation of raw materials, such as sizing, etc., and they may all be reflected in the color. It must, therefore, be granted that paper making is not an exact science.

The simple matter of two-sidedness in colored bond is one that has caused endless grief. The pulp, as it starts over the Fourdrinier wire, is about 97% water, which water must be almost entirely out of the stock at the far, or felt, end of the wire when the sheet is formed. The machine may be making paper at the rate of any speed up to 400 feet a minute, depending on quality, so it is necessary to install suction boxes under the wire to draw out the water. This suction has a tendency to draw some of the color along with the water, so the under side or wire side of the sheet is very often lighter in color than the top side or wire side.

There is the matter of dye stuffs. At one time this country was almost entirely dependent on Germany for aniline dyes. Since the World War, the domestic product has come into its own, and the United States now will take off its hat to nobody for quality, and yet there are plenty of other troubles in the colored bond field. Even the fibers have to be considered, i.e.—whether or not they will accept the dyes properly.

Now, as to standardization of colors in bond papers! Many attempts have been made along these

lines, and with the possible exception of colored litho plate papers, used mostly for labels, nothing has been accomplished. Some rag content mills have standardized in their own lines. They might make several grades of bond papers, ranging from 25% rag content to 100% rag content, and, for example, the blue or pink color will be the same in all the above grades. To attempt to get all the mills together on a definite color scheme would be a herculean task, and I doubt if it could be accomplished. Some mills create special colors with special names with the hope that no other mill will attempt to duplicate them.

Standardization in colors has practically been accomplished in one class of paper, i.e., litho colored plate and glaze. The numbers of the colors are registered so that many vendors supplying, for example, U. S. - 210 Light Yellow, will furnish the same color as nearly as it can be commercially matched. I might add, at that, that one or more responsible manufacturers absolutely ignore the standardized numbers and use their own numbers and shades.

Perhaps a public body, like the Bureau of Standards in Washington, could bring about standardization, at least in the so-called staple colors.

I certainly am for standardization of colored bonds and perhaps a limiting of the number of colors. It is not unusual to see a line embracing twelve distinct colors of one brand or watermark, and to stock such a line with its various sizes, weights, and colors is a problem for the paper merchant. Colored bonds that move slowly are apt not to match later shipments of the same colors. It is a problem indeed, and so far, not satisfactorily solved. I am for Mr. Robbins' idea, but who is going to bell the cat?

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## Steel Prices

(Continued from page 27)

those in 1929, yet wages are at an all time peak. The lead industry never had the rigid NRA code of the steel industry and does not now inherit unwritten rigid price laws.

Steel prices are probably a good barometer over a long term, say for a decade, or to compare conditions of one ten years with another period of such length. The high steel prices just now represent accurately a world condition, a condition of world scarcity of steel. Despite the rapid increase of steel-making plants and equipment in hitherto backward countries, such as Russia and Japan, the world has experienced the greatest shortage since the world war the past year. American steel exports have been the largest in years, particularly of raw materials, scrap and pig iron. During the early part of 1937, American steel makers were getting fancy premiums over home prices. Even after our recession became serious, the foreign markets gave an excellent outlet and cushioned somewhat the decline in steel business here, even though

exporters now sold abroad at discounts rather than premiums.

A generation ago the key steel price was that of steel bars, a form of steel in most universal use. But during the past ten years bars have yielded to steel sheets since this is the form of steel most common to automobile bodies and tops, refrigerators, gas ranges, steel furniture. Thus sheets have far outstripped bars as a quantity and wide variety product, and prices of steel sheets are now more barometric of the steel industry than bars.

When cold reduced and oiled sheets were recently reduced \$4 per ton, the steel makers tried to belittle the importance of these items. Yet during the last quarter of 1937 they were produced in larger quantity than other kinds of sheets and are used in the manufacture of automobiles, refrigerators and other ultra modern things.

Moreover in recent years it is light steel, such as sheets, which lead in the price changes, whereas a decade ago the heavy steel items led in price movements—such items as bars, plates and shapes.

The composite prices of steel are of course the most representative

of the steel price structure in comparison with any other date or period. The iron and steel price composite of the magazine *Steel* is made up of an unweighted average of 25 quotations per ton, including five of pig iron, three of semi-finished steel and twelve of finished steel. This composite at the end of 1937 was \$38.88 per ton compared with the high for the year of \$40.55 per ton in early April.

Another leading steel trade publication, the *Iron Age*, maintains that it is impractical to have one composite steel price for the industry, as it is similar to trying to mix oil and water. Thus it carries three price composites, finished steel, pig iron, and steel scrap. Certainly steel scrap is in a class by itself and perhaps should be treated separately, though pig iron and finished steel usually move fairly close together in trends.

The annual issues of both trade journals, appearing the first issue of each year, contain elaborate price charts and tables which are worth clipping and keeping handy for reference by those purchasing agents for whom iron and steel are important raw materials.



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## **PERSONALITIES in the NEWS**

ALLEN B. UNDERHILL, formerly purchasing agent for the J. E. Mergott Co., Newark, N. J., was elected president of that company at a special meeting of the board last month. Mr. Underhill joined the Mergott organization in 1919 and became purchasing agent two years later. He continued in that capacity for fourteen years, during which time he was active in the affairs of the New York Purchasing Agents Association, being a member of the Executive Committee for four years. He subsequently became sales manager for the company and served in that office up to the time of his recent advancement to the head of the organization.

CLIFTON BECKWITH, City Purchasing Agent at Raleigh, N. C., addressed the Business and Professional Women's Club of that city, February 8th, on the topic, "Spending Your Own Money."

EDWARD C. GEISSLER, Connecticut State Supervisor of Purchases, addressed a meeting of city and town officials of Fairfield County at the Hotel General Putnam, Westport, February 23rd, on "Purchasing by Government."

MILTON R. MADDUX, Hamilton County Purchasing Agent, spoke on "Governmental Purchasing" at a meeting of the Cincinnati Optimist Club, February 10th.

JOHN K. CONANT, Purchasing Agent of the General Printing Ink Corp., New York City, gave two lectures on professional purchasing, in connection with the Business Administration course at Upsala College, East Orange, N. J.

JOSEPH W. NICHOLSON, City Purchasing Agent at Milwaukee, was the featured speaker in a dramatized broadcast over Station WISN, February 8th, portraying the work of

the municipal purchasing office. The program was one of a series presented under the auspices of the Milwaukee Government Service League, designed to acquaint citizens with the functioning of various departments of the city government.

EARL KERN has been appointed purchasing agent and clerk of the Tiffin, Ohio, Board of Education, succeeding FRANCIS R. MANN, who has resigned after twenty years of service on the Board.

CHARLES E. KOWALSKI retired from active business January 15th after more than forty-five years of service with W. P. Fuller & Co. of San Francisco. Since 1919 he has been in charge of purchases for the company.

RAYMOND HOLLAND has been appointed purchasing agent for the Buffalo Bolt Co., North Tonawanda, N. Y., succeeding the late D. F. Cullinan.

C. D. YOUNG, Vice President—Purchases, Stores & Insurance, Pennsylvania Railroad, addressed the February meeting of the Western Railway Club in Chicago, on the topic, "Buyer Meets Seller."

D. G. SCHNABEL, formerly purchasing agent for the Standard Oil Co. of California, at Seattle, has taken over the purchasing duties for the California Texas Oil Co. and Behrman Oil Co., with headquarters in the Chrysler Building, New York City.

STUART F. HEINRITZ, Editor of PURCHASING, addressed the class in procurement at Harvard Graduate School of Business Administration, and the advanced purchasing class of the Massachusetts State Division of University Extension, February 23rd, on the topic, "What the Purchasing Agent Needs to Know."

W. E. KRAFT, Purchasing Agent for the Leland Electric Co., Dayton, has been named superintendent of that company.

GEORGE W. MONARSZYNISKI has been appointed City Purchasing Agent at Lowell, Mass.

S. S. ROTHROCK, Purchasing Agent for The B. F. Goodrich Tire & Rubber Co., Akron, since 1933, has resigned to join the sales organization of the Brooks Co., Cleveland. At the time of his resignation, Mr. Rothrock was president of the Purchasing Agents Association of Akron. F. J. KARG of the Herman Machine & Tool Co., has been named association president to fill Mr. Rothrock's unexpired term.

C. W. HILLIARD has been appointed purchasing agent of the Hawkeye Lumber Co., Oskaloosa, Iowa, effective April 1. Mr. Hilliard has been manager of the company's plant at Fort Madison for the past fourteen years.

WILLIAM H. KETTRA, Director of Purchases for the Mead Corporation, addressed the Rotary Club of Chillicothe, Ohio, February 21st, describing the policies and problems encountered in purchasing. Mr. Mead's department expends fifteen million dollars annually for raw materials and supplies.

CHARLES W. LEPPER, General Purchasing Agent for the Philadelphia Company utility system at Pittsburgh, was honored last month by the presentation of a gold service button in recognition of forty years of service with the company. Mr. Lepper became purchasing agent in 1921.

JAMES CHEEK has been appointed purchasing agent of the Hotel Edmond Meany Catering Co., Seattle, succeeding CHARLES J. OSTEN, resigned.

WILLIAM MOYER has resigned as purchasing agent for the Reading (Pa.) Hospital to devote his time to personal interests.

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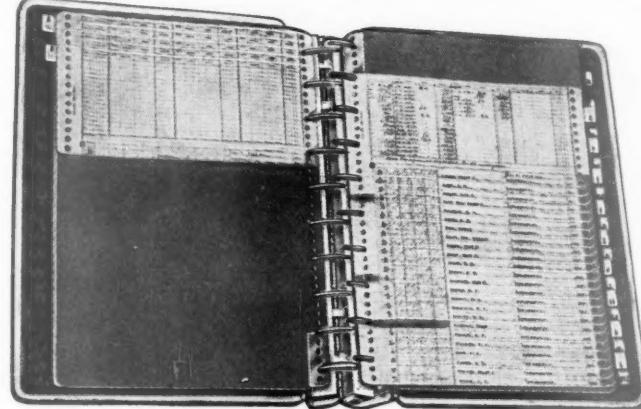
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# Among the Associations

## FEBRUARY 2

**Cambridge**—Luncheon and plant inspection visit of the **New England Association**, at the Elliott Addressing Machine Company.

## FEBRUARY 3-4

**Chicago**—Tenth Annual Midwinter Meeting of the **Public Utility Group, N.A.P.A.**, at the Medinah Club. Speakers: A. D. Pettee, District Engineer, General Cable Corp., Chicago, "Economic Aspects of Recent Developments in Wire and Cable Insulation;" F. T. McEvoy, New York Power & Light Corp., Albany, "General Stores;" R. C. Soggee, General Electric Co., Schenectady, and W. A. Furst, Westinghouse Electric & Mfg. Co., Chicago, "What Happens to the Order;" W. H. Towns, Towns Paint Co., Buffalo, "Paint Standardization;" C. S. Reeve, Barrett Co., Edgewater, N. J., "Today's Market for Gas Tar and Gas Tar Products;" T. W. Harris, Jr., E. I. du Pont de Nemours & Co., Wilmington, "The Coal Market;" Prof. Myron Umbreit, Northwestern University, "Let's Take Another Look." Robert E. Shillady of the New England Power Service Co., Boston, was elected chairman of the group, succeeding A. C. Bull of Public Utility Engineering & Service Corp., Chicago. Sumner H. Keyes of the Boston Edison Co., was elected secretary. The 1939 meeting is to be held in New York.

## FEBRUARY 3

**San Francisco**—Luncheon meeting of the **Northern California Association**, at the Palace Hotel. Speaker: Jasper L. Searles of the San Francisco Barristers' Club, "Recent Developments in Labor Law."

## FEBRUARY 5

**Seattle**—Annual midwinter party and dinner dance of the **Washington Association**, at the Hotel Edmond Meany. The committee in charge included M. F. McClane, *Chairman*, C. R. Bean and C. V. Tinker.

## FEBRUARY 7

**San Francisco**—Discussion meeting of the **Northern California Association**, in charge of the Educational Committee. Leader, Herbert W. Heintz, Standard Oil Company of California, "How to Handle Small Orders, Emergency Orders, and Personal Orders." A similar meeting of the East Bay group was held in Oakland the following day.

**Columbus**—Joint meeting of the **Columbus, Dayton, and Springfield Associations** at the Columbus Athletic Club. Presiding officer: J. A. Carroll of Columbus Iron & Steel Co., President of the Columbus Asso-

ciation. Toastmaster: Bert F. Downey of Yost Superior Co., Springfield. Guest speaker: George P. Brockway of Southbridge, Mass., President of the N.A.P.A.

**Bridgeport**—Annual meeting of the **Salesmen and Purchasing Agents Association of America**, at the Stratfield Hotel. Officers for 1938 were elected as follows: *President*, Sidney H. Challenger of the Frank H. Fargo Co.; *Vice Presidents*, Joseph D'Louhy and Frank G. Kall; *Secretary*, L. R. Watkyns; *Treasurer*, John Waller.

## FEBRUARY 8

**Cincinnati**—Dinner meeting of the **Cincinnati Association**, at the Hotel Gibson. Speaker: George P. Brockway of Southbridge, Mass., President of the N.A.P.A.

**Tulsa**—Meeting of the **Tulsa Association**. Reports from the Chicago meetings of the N.A.P.A. Executive Committee, Policy Committee, and Public Utility Group.

**Moline**—Monthly meeting of the **Tri-City Association**, at the LeClaire Hotel. Discussion of the Bituminous Coal Act, led by Larry Howe and Charles Boyle.

**New York**—Monthly meeting of the **Metropolitan Purchasers' Assistants Club**, at the Hotel Brittany. Speakers: Gerald C. McDonald, Assistant Director of R. H. Macy & Co. Bureau of Standards, "Testing Materials;" and Mr. Lamb of Remington Rand, Inc., "Steel Office Equipment."

## FEBRUARY 9

**South Bend**—Meeting of the **South Bend Association**, at the Hotel Lasalle. Speaker: George P. Brockway of Southbridge, Mass., President of the N.A.P.A.

**Buffalo**—Dinner meeting of the **Buffalo Association**, at the Hotel Statler. Speaker: Dr. M. Allen Brumbaugh, Professor of Statistics, University of Buffalo, "Business Thinking."

## FEBRUARY 10

**Philadelphia**—Dinner meeting of the **Philadelphia Association**, at the Bellevue-Stratford Hotel. Speakers: George A. Renard, Executive Secretary of the N.A.P.A., "From One P. A. to Another;" Dr. Paul V. Faragher, Metallurgist, Aluminum Company of America, "Aluminum."

**Chicago**—Dinner meeting of the **Chicago Association**, at the Hotel Sherman. Speakers: Dr. Harrison Howe, Editor of *Industrial & Engineering Chemistry*, "Science in the New Competition;" and George P. Brockway, President of N.A.P.A.

**San Francisco**—Annual joint meeting of the **Northern California Association**, with the Golden Gate Paint, Varnish & Lacquer Association.

**Dayton**—Meeting of the **Dayton Association**, at the Engineers' Club. Speaker: Dr. F. G. Barr of National Cash Register Co., "The Adventure of a Genius."

**Los Angeles**—Dinner meeting of the **Los Angeles Association**, at the Elks Club. Motion picture: "Empire of the West." Speakers: J. M. Gaylord, Chief Electrical Engineer, Metropolitan Water District of Southern California, "Pumping a Million Acre-Feet of Water in the Colorado River Aqueduct;" and Walter L. Stickel, Department of Adequate Wiring Design, Electrical Development League of Southern California, "Today It's Electric."

**Erie**—Meeting of the **Erie Association**, at the Press Club. Motion picture showing the building of the Golden Gate Bridge at San Francisco.

**Springfield**—Dinner meeting of the **Western Massachusetts Association**, at the Kimball Hotel. Speaker: Lt. Col. Robert Sears, Ordnance Department, U. S. Army, "Planning for National Defense." The meeting was preceded by a trip of inspection through the plant of the Package Machinery Co.

**Seattle**—Dinner meeting of the **Washington Association**, at the Washington Athletic Club. Address: "The British Thought and Recognition of George Washington," by Frank Drake Davison.

## FEBRUARY 11-12

**Pinehurst, N. C.**—Midwinter meeting of the **Carolinas-Virginia Association**, and conference of National Directors, District 8, N.A.P.A. *Friday evening meeting*: Presiding officer, W. G. Thomas of Duke Power Co., Charlotte. Program by national officers, including Frank H. Carter of Baltimore, District Vice President, and the following national directors: J. H. Gaston of Baltimore, H. H. Scheu of Buffalo, W. G. Thomas of Charlotte, J. L. Hodgkins of Albany, R. G. Schaeffer of Easton, J. K. Conant of New York, H. W. Elkinton of Philadelphia, C. E. Thompson of Reading, H. Braunschweig of Rochester, R. W. Appleton of Syracuse. *Saturday morning meeting*: Presiding officer, John J. Barnhardt of Cannon Mills Co., Kannapolis. Business report by J. W. Knowlton, Economist of the Duke Power Co. Address, "1938—Prosperity versus Depression," by DeLoss Walker, Associate Editor of *Liberty*.



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## FEBRUARY 12

Houston—Annual banquet and installation of officers of the Houston Association, at the Rice Hotel. The new administration includes: President, Frank C. Clemens; Vice Presidents, F. T. Fendley and W. R. Swartz; Secretary-Treasurer, Arthur H. Krueger. About 400 members and guests were present.

## FEBRUARY 14

Boston—Dinner meeting of the New England Association, at Schrafft's. Speaker: George A. Renard, Executive Secretary of the N.A.P.A., "From One P.A. to Another." President George P. Brockway and District Vice President Benjamin Baylis of the National Association were also honor guests at the meeting. The evening session was preceded by two afternoon group conferences, at which Frank E. Wagner, Superintendent of the Printing and Testing Department, S. D. Warren Co., spoke on "Printing and Paper Requirements," and W. K. Bruckhauser, Vice President of the Agar Mfg. Corp., spoke on "Corrugated Shipping Containers."

New Orleans—Dinner meeting of the New Orleans Association, at Kolb's Restaurant. Speaker: J. C. Dittbremmar of Magnolia Petroleum Corp., "Industrial Lubrication." Clifford J. Alexander of Shell Petroleum Corp. was endorsed as National Vice President for District No. 7, N.A.P.A., for 1938-1939.

Wyomissing, Pa.—Meeting of the Reading Association, at the Iris Club. Discussion of commodity prices and the business outlook.

## FEBRUARY 15

Pittsburgh—Dinner meeting of the Pittsburgh Association, at the William Penn Hotel. Speaker: A. W. Zelomek, President of International Statistical Bureau, "The Economic Situation and Trends in Business."

St. Louis—Dinner meeting of the St. Louis Association, at the York Hotel. Guest speaker: Rev. Linus Augustine Lilly, S. J., Regent of St. Louis University School of Law, "The Constitution—Business Life." Member speaker: C. H. Brown of Liggett & Myers Co., "They Satisfy."

New York—Purchasing-Sales Conference, sponsored by the New York Association, at the Hotel Pennsylvania, attended by approximately 600 purchasing and sales executives. Topic of the afternoon session: "How Right Is the P. A.? How Right Is the Salesman?" led by W. H. Oliver, District Sales Manager, Republic Steel Corp., and J. K. Conant, Purchasing Agent, General Printing Ink Corp. At the dinner meeting, Paul G. Hoffman, President of the Studebaker Corp., spoke on "Business Leadership."

*Continued on page 61*

## Obituary

HERBERT C. LINDSLEY, 64, for twenty years purchasing agent for the McCaskey Register Co., Alliance, Ohio, died at the Rochester (Pa.) Hospital February 2nd, after a brief illness.

J. M. SEALE, 60, Purchasing Agent for the Kirby Lumber Co., Houston, Texas, died at the Memorial Hospital, February 6th.

JOHN F. LOUGH, 32, Assistant Purchasing Agent for the Linen Thread Co., died at the Paterson (N. J.) General Hospital, February 8th, following a brief illness.

JOSEPH R. PRINTZ, Purchasing Agent of the Printz-Biederman Co., died at the Cleveland Clinic Hospital February 18th, after an illness of several weeks. He had been associated with the firm for more than 35 years.

ANTHONY J. HILDENBRAND, 41, Purchasing Agent for the Cincinnati Milling Machine Co., died at Bethesda Hospital February 20th, following a short illness.

### 700,000 Tons of Steel

(Continued from page 23)

Niedringhaus, and which have since grown into two of the major industries in the country, and which also led to the building of what is now the thriving city of Granite City, devoted almost entirely to the manufacture of steel and having a population of approximately 30,000 people.

"Granite Ware" is a steel utensil covered with a coat of glass enamel. "Tin Plate" is a sheet of thin steel coated with pure tin metal. Both processes greatly increase the uses to which steel is adapted.

The manufacture of "Granite Ware" was started in the late 60's by the St. Louis Stamping Company, a concern organized by the Niedringhaus brothers in 1850 for the purpose of manufacturing kitchen utensils. Later it was merged into the

National Enameling and Stamping Company, which concern is now the largest of its kind in the world.

### Rolling Mill Established

In order to get sheet iron (steel was not yet available) to work up into the utensils to be enameled, the original company erected, in 1878, a small rolling mill, the first in St. Louis. This mill continued to operate until just a few years ago when it was finally dismantled.

The industry grew to such proportions, it was decided to build a larger rolling mill with open

hearth and blooming and bar mill equipment, and what is now Granite City was selected for the site in 1891. Four years later, the mill was completed and first heat of steel was poured August 30, 1895. On another part of this site, was erected an additional and much larger stamping and enameling plant for the manufacture of "Granite Ware."

While the expansion that was to take place in Granite City was being planned, the company began experiments in tinplating and in 1891 sent 100,000 tin pie plates



### Economical -

because they deliver a maximum number of cuts between sharpenings—at a high rate of production.

That's why it pays to use Catalog No. 32 as your buying guide for cutters.

Brown & Sharpe Mfg. Co.,  
Providence, R. I.



**BROWN & SHARPE  
CUTTERS**

## A METAL OF MANY MERITS!

PUT IT  
TO WORK  
IN YOUR SHOP

### SEYMOUR

PHOSPHOR BRONZE



If your shipping room has difficulty in getting packages out on time, perhaps you had better change to Red Streak Sealing Tape. It seals packages as fast as it is applied, and will adhere permanently. Dirt and moisture resistant, too. If you want all this and your budget will not permit high priced tape . . . then try Red Streak Sealing Tape. Write today for details and prices.

THE BROWN-BRIDGE MILLS, INC.  
ROY, OHIO



AN alloy of copper, tin and phosphorus. Highly resistant to corrosion, friction, abrasion, "fatigue." Develops very little thermal change. Extremely resilient. Much used for flat and coiled springs, particularly in electrical design: when leaded, for screw machine parts.

INTERESTING  
CATALOG  
ON REQUEST

completely explaining  
this unusual alloy. A  
valuable book that every  
P. A. and plant manager  
should have at his elbow.

THE SEYMOUR  
MANUFACTURING  
CO.  
55 Franklin St.,  
SEYMOUR, CONN.

## COILED WIRE SPRINGS

## Wire Form Specialties



made in their St. Louis factory to be used by William McKinley in his campaign for governor of Ohio. According to records, in that year the total production of all "Tinplate" in the United States was only 50 tons. Today, the annual production is approximately 2,000,000 tons.

### Workmen from Wales

As soon as the rolling mills in Granite City were completed and in operation, the company began the commercial production of "Tinplate" made from its own open hearth steel. In order to have skilled workmen, such were brought from Wales in sufficient number to operate the mills. Some of those workmen are still with the company and hundreds of their sons and grandsons are now employed by the vastly enlarged Granite City Steel Company, a concern which was separated from the National Enameling and Stamping Company in 1927.

Among the 116 companies engaged in manufacturing flat steel into finished commodities, several have long records of continuous operation. Two, the C. Hager and Sons Hinge and Manufacturing Company and the Pauly Jail Company, have been in business more than 70 years. Three others, the Granite City Steel Company, the Grimm Stamp and Badge Company and the McCabe Powers Auto Body Company, have been doing business for more than 60 years. Eight others have operated for more than 50 years; twenty for more than 40 years; 21 for more than 30 years; 26 for more than 20 years; 20 for more than 10 years and 10 started less than 10 years ago.

The products of these concerns are going to every part of the world, and with the constantly new fields opening up, wherein steel is used as a substitute for materials formerly used, there is no good reason to believe the industry has reached the saturation point.

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D. C. MORBECK, Seattle purchasing agent for Manning's, Inc., has been transferred to the San Francisco purchasing office of the organization.

GEORGE W. SAMPLE, for the past twelve years purchasing agent for the Pelican Bay Lumber Co. of Oregon, has resigned to enter the insurance business at Klamath Falls, Oregon.

### General Stores

(Continued from page 16)

represented in a list for each department, which apparently is adequate to take care of any emergency which may arise. Further, emergency quantities in the district storerooms are kept low, because the back log is carried in the central warehouse.

There is no question but that the items listed are important ones and we are just as desirous as are others of having them readily available when needed, so we frequently check these lists back against the stock ledgers, to be sure that the storekeepers do maintain the quantities set forth. The approval of the operating Vice President is required on any reissues or supplements. These emergency lists were, of course, welcomed by the storekeepers, because they are no longer required to guess at the items which may be needed for such work and they have in their hands a list of not only the emergency items maintained in their particular area, but of the entire system.

### Turnover Chart

Then we develop what we call a Turnover Chart. (See Figure 2) It is merely a graphic picture of the results obtained in each storeroom and it is sent monthly to all storekeepers, accompanied by a letter of comments regarding the results. Each storekeeper receives a chart, which shows the results he is getting compared with those of all the others. In other words, it has injected a competitive spirit which has very materially stimulated the storekeeping interest in turnover, and it goes further than the stores

*flash! 1938 Modernized Packaging*

### Miller Line STENCIL INKS

1 Pound in one-pound container for open drum use.

2 Half-pound containers in one carton for closed drum use.

1/2-pound container with wide mouth for brush use, such as color ink application.

There is no unsolved mystery in the satisfactory operation of a stencil duplicating machine or mimeograph. It is a finely adjusted piece of machinery and needs a certain amount of care as such. If stencil, pad, and drum are kept in proper condition, and adjustments made when necessary, there will be splendid results as long as the proper Miller Line Stencil Ink is used.

When in doubt, get in touch with your Miller Line representative. Or write—

**THE MILLER-BRYANT-PIERCE COMPANY**

Manufacturers of Miller Line

Stencil Inks, Carbon Papers, Inked Ribbons

219 River St., Aurora, Illinois



### DAYTON GRINDING WHEELS

Regardless of your requirements, you can obtain a Dayton abrasive wheel of the exact specifications the work demands. On the market for years and the preference for a wide range of operations. Write

The  
Simonds-Worden-White Co.  
Dayton, Ohio  
FACTORIES AT: Dayton, Cleveland,  
Beloit, Buffalo



### WAY BACK IN 1854

When Commodore Mathew Perry was opening the ports of Japan, this Company was pioneering in the Bolt and Nut Industry.

We can supply you with anything—standard or special—in the form of a Bolt, Nut or Screw.

Give this dependable source of supply an opportunity of quoting.

**CLARK BROS BOLT CO.**

MILDALE, CONN

Practice makes Perfection



# PRINTING

Lowest prices on  
Letterheads Envelopes

Statements

Salesbooks Cards

Invoices Circulars

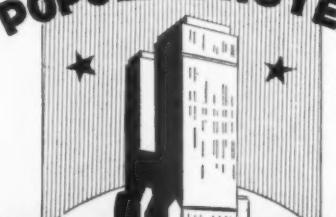
5000 Envelopes \$8.40  
delivered

Send sample of your  
present printing for bid

Drop us a postal for real  
money-saving  
Price List

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Box 84 Rockmart, Georgia

PHILADELPHIA'S  
POPULAR HOTEL



HOTEL  
**ADELPHIA**  
YOUR HOME  
AWAY FROM HOME

*Moderate Rates*

FOUR RESTAURANTS

Floor show at dinner and  
supper. 14 Star Acts

NEAREST EVERYTHING

**CHESTNUT at 13th ST.**

personnel because all local managers, superintendents or line foremen after all are primarily interested in the successful conduct of the company's business in the localities for which they are directly responsible, and they are anxious and willing to help the storekeeper maintain the home-town prestige. I believe that through this medium we have secured more and better cooperation from those people than we ever could have otherwise, but we are careful in phrasing our monthly letters of comment so that we are not critical. This chart shows the results for the year 1937. The figures are compiled on the accumulative basis.

This plan has been operating for two years. It has done two things: (1) it has definitely placed the responsibility for securing good results in each locality with the storekeeper in charge, and (2) it has created and stimulated a lot of healthy support and interest in our work which was not previously evident.

With the ready access to markets, the easy means now in effect for securing materials, we feel that we should get at least eight turnovers per year, or the equivalent of a 45 days' supply in the average storeroom. We do not, of course, expect that number from those operating plant storerooms where perhaps 80% of the investment is in plant spare parts on which we hope there won't be a turnover, because of their emergency nature.

Those storekeepers who reach the proper brackets are given personal mention in the monthly letters. They, of course, like to get the credit, but it's good business as well because copies of those letters are seen by all interested supervisors.

## Analysis Sheets

The next question was, what to do regarding storerooms which did not show satisfactorily on the chart. In our system, the stores records are centralized in the accounting department. In fact, they are in the same building, only one floor removed from the purchasing office. After some thought it was decided



Only  
**WIREGRIP**  
Belt Hooks  
have the blue  
Aligning Cards  
(pat. applied  
for) that locks hooks in position, prevents them from loosening, prevents hook loss from handling, prevents waste of short ends. Every WIREGRIP Hook to the last one can be used.

## Flexible BELT LACING

STEELGRIP is a stronger lacing for all power and conveying belts. Clinches smoothly into belt, compresses ends, prevents fraying, 2-piece hinged rocker pins prevent excessive wear. In boxes or long lengths.

Write for Catalog  
ARMSTRONG-BRAY  
& CO.

"The Belt Lacing  
People"

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23rd Annual Convention  
National Association  
of Purchasing Agents  
St. Louis ... May 23-26

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ONLY NATIONAL MAGAZINE PUBLISHED  
EXCLUSIVELY FOR PURCHASING AGENTS

to develop an "Analysis Sheet." It merely provides space for recording items, quantities used past two months, quantities used past six months, and remarks. We review the stores ledgers, and one who is familiar with stores items, with the particular locations, and who has before him a copy of the emergency lists, extracts those materials which did not move as we expected them to. This analysis is taken promptly to the storeroom involved and reviewed item for item with the storekeeper. Later, any notations made

of questions to be referred to either the Electric Superintendent or the Gas Superintendent of the particular area, are discussed with them and, if necessary, finally with the General Superintendent. Ultimately, the sheets are left with the storekeeper for a period of ten days during which time he works out the comments we have noted in the remarks column. These usually include suggestions as to how to improve the movement of some items, and what to do with or about others. Frequently, of course, we find they are overstocked for one reason or another in the standard items. We do not allow a general dumping of such items into the central warehouse; we merely note that they are going to be used promptly, if they are, and the storekeeper is left to work out his own salvation, during which time he of course occupies a lower point on the turnover chart than he would have attained if either he or his line foreman, or his superintendent, or someone in his own neighborhood, had used better estimating judgment.

#### Supervision

The supervision and regulation of stores work is properly a function of the purchasing department. Through this centralized control, there can be a uniformity of practices and a correlation of efforts which will produce the best results. To accomplish this purpose, we have issued what is called a "Stores Manual." It is merely an indexed accumulation of instructions issued to standardize, in all storerooms, those practices which are common to the majority, subject only to a few exceptions due, perhaps, to local conditions. This manual also serves as a guide and a reference book when questions arise from time to time and, since it is the only source of such material, it removes the possibility of receiving conflicting instructions from more than one department or person, and the storekeepers are thereby placed in a position where they are not subjected to individual and oftentimes varying opinions in respect to stores handling.



**RA-TOX VENTILATING SHADES** improve working conditions by admitting up to 40% more light and air. They let in fresh air without direct draft . . . mellowed light without blinding glare.

**RA-TOX WOOD FABRIC SHADES** are efficient on all types of wood and steel sash. Our special fixtures particularly adapt them to steel sash with swinging ventilators. The most successful and largest factories in America are RA-TOX equipped. Look into the advantages of RA-TOX for your plant . . . easy to regulate . . . strongly built and durable . . . lasting for at least 20 years.

## RA-TOX OFFSET WOOD FABRIC SHADES for INDUSTRIAL SASH

HOUGH SHADE CORPORATION

(Industrial Division)

1020 Jackson St., Janesville, Wis.

Send complete RA-TOX details at once.

Name . . . . . Address . . . . . City . . . . .

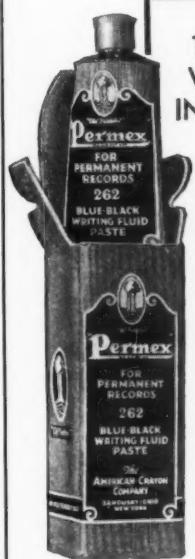
State . . . . . Individual . . . . .

( ) Steel Sash ( ) Wood Sash

*Send the attached coupon for interesting data; give us the measurements of your openings and we will gladly submit an estimate without any obligation.*



## Permex



### THE MODERN WRITING FLUID IN PASTE FORM

Costs One Half the Price of Fluid Ink! Ideal for large users of ink. Saves storage space. Eliminates handling of bulky fragile bottles. PERMEX is the modern writing fluid, perfect for fountain pen use because it is absolutely free of sediment. Writes a rich deep blue, turning to an intense permanent black. Needs only to be mixed with warm or hot water for instant use.

Write today for complete information or order 12 quarts and bottle with patent pour-out complete for \$6.00.

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110 NEW MONTGOMERY STREET, SAN FRANCISCO SANTA FE BUILDING, DALLAS, TEXAS

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## ELECTRIC DISC SANDER

No. 557

**F**AST AND POWERFUL, comfortable to handle, and easy to operate and control, this is a real production tool for grinding and smoothing down welds, steel and iron castings, auto body and fender work and removal of rust and scale. If desired, a cup-shaped grinding wheel or tire brush can be substituted for the pad and abrasive disc. Standard equipment includes 20 feet of 3-conductor cord and rubber plug, a heavy duty switch, a 7" pad, and one abrasive for metal sanding.

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## BOOK STAND

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**D**ESIGNED AND BUILT to supply a need in offices, libraries, churches, homes and schools, these sturdy stands provide ease of reading, convenience, and firm support for large heavy ledgers, rate books, reference books, dictionaries, Bibles, etc. Colors

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to harmonize with surrounding appointments—walnut, olive green, mahogany. Built of all metal frame, braced for ample leg room, perfectly balanced, and mounted on large, easy rolling, quiet rubber casters. 5-ply veneer top with rounded corners, drawer for stationery, 2 $\frac{1}{2}$ " opening for extra book. Size of top is 13 X 24 inches. Height at the front, 28 inches; at back, 33 inches.

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## ELECTRIC CHECK SIGNER

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**T**HIS PORTABLE ELECTRIC device combines high speed operation and full signature protection. It can be used as a check signer, letter signer, or check endorser. Continuous form checks may be signed, one at a time, without detaching. The signature is printed through a ribbon. Plates may be had with or without a protective background, and as many as three signatures may be engraved on a single plate (3 $\frac{1}{4}$  X 2 $\frac{5}{8}$  inches) as well as trade marks, slogans, or other insignia. A non-printing, non-resettable signature counter with a capacity of 99,999 is built in the machine, and there are three separate locks to prevent unauthorized usage: the Executive's lock is necessary for insertion or removal of signature plate; the Operator's lock controls the current and prevents operation of the machine during any temporary absence; the Case lock prevents unauthorized persons from gaining access to the internal mechanism. Provided for a.c. or d.c. 110 or 220 volts, 60 or 25 cycles.

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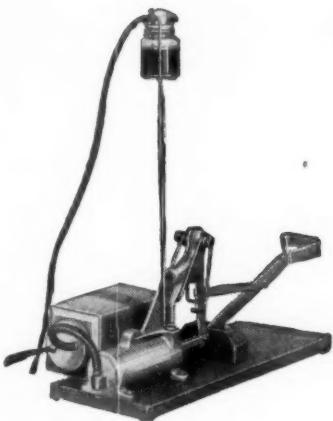
**P**RECISION OILING OF office machines, electric appliances, door hinges, clocks, guns, fishing reels, small machines and similar equipment in factory, office and home is facilitated by this new oiler, built like a fountain pen. It will reach otherwise inaccessible points neatly, and a simple pressure of the steel tip ejects  $\frac{1}{10}$  of a drop of oil. The process may be repeated as required to provide the exact amount of lubrication desired.



**VENTILATING FAN**  
No. 561

A NEW HIGH VELOCITY model ventilating fan, with blade diameter of 20", is designed for outstanding performance in offices, factories, restaurants, stores, shops, etc. It produces a power air current just above "head level," resulting in a cooling effect over large areas without uncomfortable drafts or blasts. It is available in three models—with floor standard, with short pedestal for counter and wall use, or for ceiling mounting.

Use coupon page 56



**LIQUID SPRAY**

No. 562

OPERATED BY FOOT-POWER, this rugged and efficient spraying device is independent of electrical or mechanical power sources and is particularly adapted for use at out-of-the-way locations in store, shop or factory. It is a thoroughly prac-

**KROM-NICK**  
**18-8 Stainless Steel**

Cap Screws • Machine Screws • Wood Screws  
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● Orange Core Sealing Tape is certain-sure on the roughest trip. Made of heavy Kraft paper, it has the extra strength to withstand the severest man-handling and to protect your shipments against bumps and thumps of the hardest journey.

It seals tight as a drum and has the outstanding ability to bring your shipments through to a safe and sound arrival. All-around superiority and low cost have made it America's best-selling sealing tape. Write for FREE SAMPLE ROLL.

**SHIPMENTS ARRIVE SAFE and SOUND**

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**COES** SINCE 1830  
*The PAPER KNIFE*  
**"CUTTER MEN" STAND BY**



**LORING COES COMPANY**  
WORCESTER, MASS. U.S.A.

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# BOSTON PENCIL SHARPENERS

IF IT IS A PENCIL SHARPENER . . .  
IT MUST BE A BOSTON  
SELF-FEEDER No. 4



The Boston Model Self Feeder No. 4 above, actually pays for itself by eliminating pencil waste and effort. To get all the writing a pencil can deliver—standardize on Bostons. They have the exclusive feature of Speed Cutters with 15 cutting edges, which at no extra cost, extend service 25% over ordinary equipment. Models from \$1.25 to \$14.00. Send for special circular on Boston Draftsman pencil sharpeners, and speed ball pen instruction.

C. HOWARD HUNT PEN CO.  
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Manufacturers of Boston Pencil Sharpeners, Speedball Pens, Clips and Hunt Pens.

### Speedy and Accurate Hand Sawing

is now possible. This revolutionary, heavy duty hack saw frame, drop forged from hard aluminum alloy has changed the entire hack saw picture. Absolutely rigid with machine-type blade holders, it holds an unbreakable, high-speed-edge blade at machine tensions. Double handed grips increase power and accuracy. Improved design applies power below the line of cutting and prevents the blade from sticking in the cut. Try it and you will be satisfied with no other. Your dealer will demonstrate.

ARMSTRONG-BLUM MFG. CO  
"The Hack Saw People"  
5760 Bloomingdale Ave. Chicago, U.S.A.

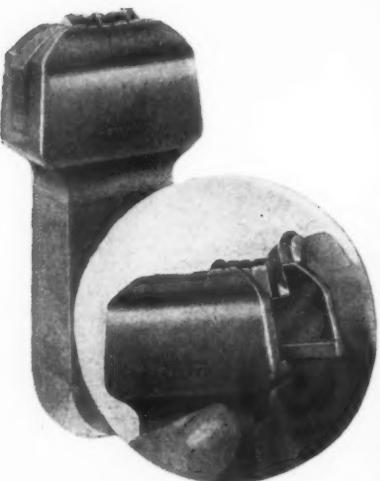


tical and outstandingly economical means of spraying paint on walls or other finishing jobs, as well as for fumigation and insecticide purposes. Weighing less than ten pounds, it is readily portable. The operator pedals with one foot, directing the spray gun with one hand. The pump forces air into a reservoir, from which it passes through regulating valves that maintain an even pressure, through the spray container and into the gun. Strongly constructed of durable materials, it provides long service at a minimum of maintenance cost.

Use coupon page 56

PAGE 58

### TYPE HOLDER FOR CURVED SURFACES



No. 563

THIS NEW INTERCHANGEABLE type holder is designed for use in stamping round or curved surfaces such as pipe or shafts. The holder contains a removable slide, which holds the type set to conform with the desired radius. Only one holder is required for various radii, but individual slides and corresponding types are needed for each radius used. The slide is readily snapped open for insertion of the proper type markings. The sides of the holder are knurled to give the operator a firm grip, and the material is safety steel which will not mushroom or spall in service.

Use coupon page 56

### PIPE ENDS



No. 564

MADE OF MOLDED laminated plastic, these pipe ends have high electric insulating properties, good mechanical strength, and are unaffected by water, steam, chemicals, chemical fumes, or rapid temperature changes. They are designed to prevent dangerous grounds, and are made in two styles: threaded to fit standard pipe and conduit thread, or plain with three set screws for fastening. Both types are available in standard sizes from  $1/2$ " to 4".

Use coupon page 56

### ELECTRIC WATER COOLER



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THIS IMPROVED LINE of water coolers is available in various capacities from 4 to 23 gallons per hour, using motors from  $1/4$  to  $3/4$  h.p. Automatically controlled by a thermostat in direct contact with the outlet water, it operates by means of a

PURCHASING

slow speed large twin cylinder reciprocating condenser. All plumbing connections are made through the back of the cabinet, which is of 17 gauge spot-welded steel, finished in gray lacquer. The bubbler maintains a constant stream height regardless of pressure, and is mounted in a cast iron vitreous enameled head which covers the entire top of the cooler.

Use coupon page 56



ACID  
MASK

No. 566

**P**RIMARILY DESIGNED TO protect chemists working with nitrometers, this mask is a practical safeguard in many other fields for general protection of the eyes and face from splashes of acid, oils, alkalies and other substances. It is formed of sheet aluminum, fitted with a replaceable 7 x 9 inch window of clear cellulose acetate. It is equipped with a form-fitting headgear of vulcanized fiber, adjustable to various head sizes. Friction hinge joints permit the wearer to raise the mask over the head when not exposed to the hazard. It weighs only 14 ounces and may be worn over glasses without discomfort.

Use coupon page 56

23rd Annual Convention  
National Assn. of Purchasing Agents  
St. Louis—May 23-26, 1938



### Bituminous Coal

**MINES:** Scalp Level, South Fork, Hastings and La Rayne Districts of Penna., and Fairmont District of West Virginia.

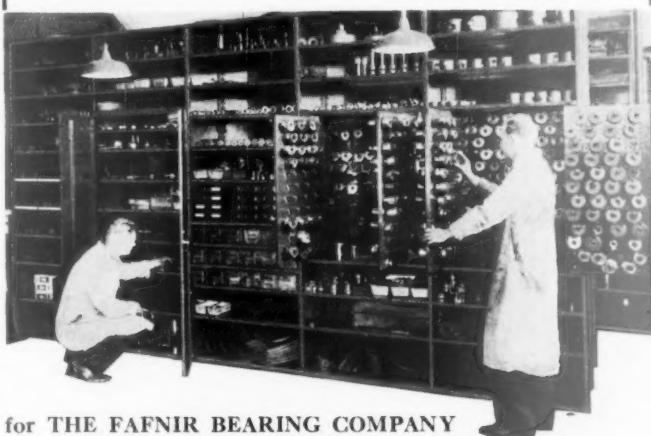
**SIZES:** Lump — Egg — Nut — Pea — Stoker — Mine Run—Especially Prepared Coal for Pulverizing.

**CORTRIGHT COAL COMPANY**

PENNA. BLDG.  
PHILADELPHIA

ONE BROADWAY  
NEW YORK

## LYON TOOL RACKS Increase Productive Floor Space



for THE FAFNIR BEARING COMPANY

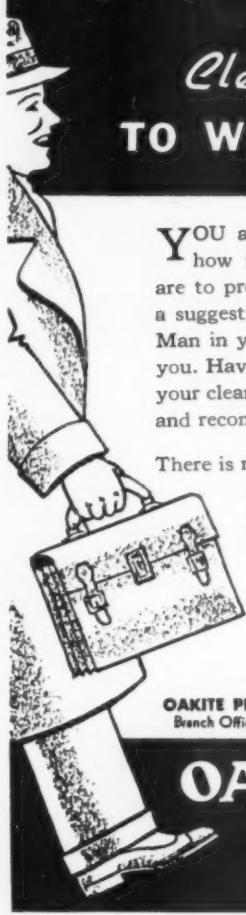
- Effective conservation of floor space . . . one of many money saving features of Lyon Steel Storage Equipment . . . is convincingly demonstrated in the Automatic Machine Division of The Fafnir Bearing Company. "Space for 3 additional lathes proved to be no problem when wooden tool racks were replaced by compact Lyon Steel Racks. Furthermore, the Lyon Racks are much more satisfactory . . . making forming tools, reamers, pads and chucks conveniently accessible to the set-up men."

Use Lyon Storage Equipment Service to determine whether and how savings may be effected in your handling and storage of tools, parts and supplies.

**LYON METAL PRODUCTS, INCORPORATED**  
3303 River Street

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**PUT THIS  
Cleaning Expert  
TO WORK FOR YOU!**



**YOU** and your production executives know how important the *right* cleaning methods are to profitable operations. Well, then, here is a suggestion. The next time our Oakite Service Man in your locality calls, put him to work for you. Have him make a complete check-up of all your cleaning. Take advantage of his suggestions and recommendations.

There is no charge for this service. It permits us to place at your disposal the specialized knowledge of our entire staff and research laboratories . . . knowledge developed in the course of our 29 years' experience devoted exclusively to more economical, thorough and faster cleaning.

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**OAKITE PRODUCTS, INC. 54 THAMES ST., NEW YORK**  
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**OAKITE Certified CLEANING**



**Victoria**  
**TOILET TISSUES**

*Made by*  
**VICTORIA PAPER MILLS COMPANY FULTON, N.Y.**

Craftsmen in the art of paper making for 58 years. Distributed by reliable paper merchants everywhere.

**Made Right  
Priced Right**

### Howard T. Lewis

(Continued from page 20)

Secretary of War, and in the event of hostilities he would promptly be assigned to a key position in the Industrial Mobilization plan. Meanwhile, he is the contact man between the War Department and the School of Business Administration, serving as advisor to the six Army and two Navy men attending the school under government auspices.

**O**N THE PERSONAL SIDE, he lives in Belmont with his two children—Howard T. Lewis, II, now a sophomore at Harvard and heading toward a career in medicine, and Marjorie, a graduate of Lawrence College in music and arts and with advanced work at Boston University in the teaching of music. That interest in music is shared by Professor Lewis. He confesses to a frustrated ambition to play the slide trombone in a band. Actually, he has mastered the saxophone for his own pleasure.

Active and energetic, he finds relaxation in a variety of outdoor sports. An ardent deer hunter and fisherman, a dog-lover with a special fondness for English setters, and a ski enthusiast, he enjoys to the full his country home of a hundred acres on Lake Massacecum at Bradford, New Hampshire.

It is probably natural, from his academic position, that he is generally referred to as "Professor" Lewis, but a number of other titles would be equally appropriate. He might be known as "Doctor" Lewis, for Lawrence College honored him with the LL.D. degree in 1936. Or as "Colonel" Lewis, for his eight years of service in the Procurement Division, U. S. Specialist Reserve, have brought him to the Lieutenant-Colonel's rank. The boys on the campus habitually refer to him as "Tiger" Lewis, an apt characterization of his restless, purposeful energy and power on the classroom dais. But because he is first and last a regular fellow, impatient of formality

and free from any delusions of grandeur—one who cherishes the warm friendliness of his honorary membership in N.A.P.A.'s Hendricks Club even above his rank as Cavalier of the Crown of Italy, bestowed upon him in 1925 by the government at Rome—he lays claim to nothing more pretentious than the simple, democratic, American title of "Mister." And after all, for he's that sort of fellow, it's easy for those who work with him to go the rest of the way. To scores of men in school, in business and in purchasing, he is—Howard Lewis.

—S. F. H.

GERALD S. MARTIN has been appointed purchasing agent of the American Bantam Car Co., Butler, Pa. Mr. Martin has been associated with the automotive industry for 23 years, with the Good-year Tire & Rubber Co. and the Willys-Overland Co.

## Among the Associations

(Continued from page 50)

**Jackson**—Meeting of the Central Michigan Association, at the Otsego Hotel. Charles Yates of the Dudley Paper Co., Lansing, was elected president, succeeding Ivan Swift of Lansing Stamping Co. A. N. Snyder was elected vice president, and R. Mac Kenzie was reelected treasurer. Speaker: Ernest M. Gillaume, manager of the Felters Co., "Manufacture and Uses of Felt."

**Milwaukee**—Dinner meeting of the Milwaukee Association, at the Elks Club. Speaker: Edward T. Gushee, Vice President of the Detroit Edison Co., "A Buyers' Get-together."

**Huntington, W. Va.**—Dinner meeting of the Tri-State Association, at the Hotel Prichard. Speaker: James E. O'Brien of Cleveland, District Vice President N.A.P.A., "Progress in Purchasing."

### FEBRUARY 16

**Canton**—Dinner meeting of the Canton & Eastern Ohio Association, at the Elks Club. H. B. North, President of the Ferry Cap & Set Screw Co., Cleveland, spoke on the recent conference of "Little Business Men" at Washington. Mr. North was one of the committee of 10 who presented the recommendations of the conference to President Roosevelt.

### FEBRUARY 17

**Toledo**—Dinner meeting of the Toledo Association. Speaker: Arthur L. Glattke, Superintendent of the Ohio Reformatory at Mansfield, "The Evolution of Penology."

**Birmingham**—Luncheon meeting of the Birmingham Association, at the Redmont Hotel. Report of the Chicago meeting of the Public Utility Group, by George Cole of Alabama Power Co., and Jack Belcher of Birmingham Electric Co.

**Cleveland**—Executives' Night meeting of the Cleveland Association, at the Cleveland Hotel.

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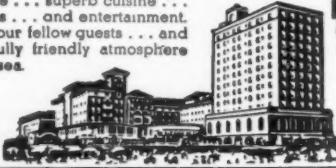
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Toastmaster, A. G. Hopcraft. Speakers: George A. Renard, Executive Secretary of the N.A.P.A., and Clifford Hood, President of the American Steel & Wire Co.

Crockett, Cal.—Plant inspection visit and dinner meeting of the Northern California Association, at the California & Hawaiian Sugar Refining Corp.

## FEBRUARY 19

Chicago—Annual Ladies' Party and dinner dance of the Chicago Association, in the Crystal Ballroom of the Blackstone Hotel. The committee in charge consisted of E. Fitzgerald, George Stack, and E. Van Vechten.

## FEBRUARY 22

New Haven—Dinner meeting of the Connecticut Association, at the Quinnipiac Club. Speaker: William G. Morse of Harvard University, "Handling of Small Orders."

Tulsa—Open meeting of the Tulsa Association. Talking picture "Hidden Enemies," dealing with the menace of termites and presented through courtesy of the Wade Terminex Co.

## FEBRUARY 23

Syracuse—Meeting of the Syracuse Association, at the Hotel Onondaga. Speaker: George A. Renard Executive Secretary of the N.A.P.A., "From One P.A. to Another."

## FEBRUARY 24

San Francisco—Luncheon meeting of the Northern California Association, at the Palace Hotel. Speaker: Ralph Desmond, Chief Inspector, U. S. Navy, "Inspection of Naval Materials."

Seattle—Plant visit of the Washington Association, at the new canning plant of the Washington Cooperative Egg and Poultry Association.

## FEBRUARY 26

Cincinnati—Stag bowling party of the Cincinnati Association, at the Hyde Park Country Club, in competition for the President's Cup, donated by Wm. McK. Reis.

Los Angeles—Annual Ladies' Night party of the Los Angeles Association, at the Elks Club. Dinner dance and floor show.

## FEBRUARY 28

San Francisco—Discussion meeting of the Northern California Association, in charge of the Educational Committee. Leader: Atty. Elliott M. Epstein, "Contracts and Legal Advices of Purchasing." A similar meeting of the East Bay group was held in Oakland the following day.